DOCUMENT RESUME

ED 048 149 SP 007 018

TITLE	Consumer Mathematics. Teaching Units.
INSTITUTION	North Carolina State Board of Education, Raleigh. Dept. of Public Instruction.
PUB DATE	69
NOTE	169p.
EDRS PRICE	EDRS Price MF-$0.65 HC-$6.58
DESCRIPTORS	*Curriculum Guides, *Mathematics Curriculum, *Practical Mathematics, *Secondary School Mathematics

ABSTRACT

GRADES OR AGES: Secondary school. SUBJECT MATTER: Consumer mathematics including--money management, transportation, probability, swindles and gyps, insurance, housing, taxes, consumer credit, banks, savings, and investments. ORGANIZATION AND PHYSICAL APPEARANCE: The guide is divided into ten parallel units, one for each of the above areas, which lists objectives, activities, and materials. It is offset printed in a hard-cover, looseleaf notebook. OBJECTIVES AND ACTIVITIES: Behavioral objectives for each unit are listed at the beginning of the unit. They are followed by lists of topics to be covered and descriptions of suggested activities. Activities are not correlated with any specific objective. Related mathematical problems and lists of suggested reading assignments are also given. INSTRUCTIONAL MATERIALS: There is a list of resources at the end of each unit which includes both printed and audiovisual materials. STUDENT ASSESSMENT: It is suggested that the behavioral objectives for each unit be used in student assessment. OPTIONS: The guide is suggestive only. It states that the teacher should feel free to add to, omit, or revise any part of it. (RT)

ED048149

CONSUMER MATHEMATICS

TEACHING UNITS

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

Mathematics Education Staff

Robert R. Jones, State Supervisor
Cleo M. Meek, Associate State Supervisor
John W. Ogle, Associate State Supervisor
Mary S. Tyson, Secretary
Helen H. Chu, Secretary

State Department of Public Instruction

Raleigh, North Carolina

September, 1969

SP007018

FOREWORD

The major role of the State Education Agency is to render services to the public schools of North Carolina. One of the ways in which this may be done is by issuing curricular materials. Most of us realize that a single-text dominated course will not adequately enlist the interest of all students. We also recognize that the tremendous demand upon teachers' time creates problems in keeping track of new developments and materials. We hope that this manual will provide assistance to teachers in locating materials and planning activities appropriate for the children enrolled in their classes.

A. Craig Phillips
State Superintendent of Public Instruction

PREFACE

Consumer Mathematics is sometimes thought of as a course for students who do not plan to attend college. If it is, it ought to be deliberately designed to be as practical, relevant, immediately useful, and down-to-earth as any instructional program can be.

The facts of the matter are, however, that we are all consumers. There is no segment of our population that does not need mathematical skills and insights when we are faced with decisions involving insurance, credit, housing, taxes, transportation, and other everyday money matters. These apply to everyone regardless of his station in life or his academic goals. Of course, the degree and type of need will vary, and the instructional program should reflect that variety. However, for all students, the course needs to be as relevant and useful as possible. This curriculum guide has been prepared to help teachers provide such a program.

Jerome H. Melton
Assistant Superintendent for Program Services

ACKNOWLEDGEMENTS

The direct involvement of classroom teachers in planning statewide curriculum projects is a practice of long standing in the Department of Public Instruction.

We value the services we receive from persons in the public schools as we, in turn, seek to serve those schools. We are particularly grateful to the following persons who served on writing committees in the preparation of this publication:

Mrs. Rachel J. Amick
Eastern Alamance High School, Mebane

Mrs. M. W. Blakely
J. W. Ligon High School, Raleigh

Mrs. Doris S. Ellington
Fuquay-Varina High School, Fuquay-Varina

Mrs. Marguerite H. Greer
Whiteville High School, Whiteville

Mrs. Margaret S. Perkins
Western Alamance High School, Elon College

Mrs. Marie D. Spears
Olympic High School, Charlotte

Mr. F. W. Stanley
Union Pines High School, Cameron

Nile F. Hunt

Nile F. Hunt
Director, Division of General Education

INTRODUCTION

The objective of this guide is to assist the teacher of Consumer Mathematics in planning and conducting the course in such a way that it will be immediately interesting and lastingly meaningful to the students. The series of units has been developed with one eye on the present needs of the students as consumers and the other on their long-range needs. The influence of the first criterion is evidenced in the timely and practical nature of the suggested activities and problems. The influence of the latter is not as evident owing to the innate uncertainty of the distant future in a constantly changing world. It is quite likely that the problems which may arise in the distant future do not exist as problems today; therefore, frequent opportunities are given the students to apply general strategies of problem analysis.

Hopefully the unit approach will motivate the reluctant student to participate in class activities. That he may learn is one objective and that he may observe the relevance of the school to community life is another.

The guide consists of ten units, each of which is devoted to a topic concerning consumer application of mathematics. The order of presentation is left to the teacher's discretion. Due to the nature of consumer activity, there is some overlap of generalities in consumer economics as well as in related mathematical concepts. This repetition is not a disadvantage: It provides a vehicle for review and reinforcement. The units included in the guide are:

- Banks and Their Services
- Consumer Credit
- Housing
- Insurance
- Mathematics of Uncertainty: Probability & Statistics
- Money Management
- Savings & Investments
- Swindles & Gyps
- Taxes
- Transportation

The units have the following format:

An introductory statement to the teacher indicating some reasons for studying the topic.

An outline of the unit which includes:

- Objectives in terms of observable behavior
- Suggested topics for study
- Mathematical concepts

Suggested introductory materials

Suggestions for developing the unit

Additional activities

Typical related problems with answers

Suggested reading assignments

A bibliography of free materials

Order forms for free materials

A teacher's evaluation of the unit

The guide has been designed to develop each unit through the device of enlarging the students' previously acquired knowledge. Questions and activities have been selected to lead the students to engage in investigations which will reveal misconceptions they may have concerning a particular consumer topic.

USING THE GUIDE

The guide is designed to help the teacher lead the students to a recognition of the uses of mathematics in consumer activities. The mathematics is presented concretely rather than abstractly, as an end in itself. When students' mathematical competencies do not satisfy such a need, time should be given to corrective practices. The properties of numbers may be emphasized when they can increase comprehension or simplify computations. Mathematics becomes more efficient when comprehension is matched with speed.

The unit approach on which the guide is based offers many opportunities for participation by individuals and small groups. Students involved in activities consistent with their abilities are likely to achieve some degree of success. Recognition of successful efforts will do much to improve attitudes.

The guide contains listings of many previewed teaching aids that are available at no cost other than return postage on borrowed materials. The classroom use of these up-to-date materials - booklets, charts, films and filmstrips - is recommended. In order that maximum benefits may be derived from the materials, it is strongly suggested that the teacher order them as early as possible. No matter how early they are ordered, some materials may be late in arriving. In such instances, the materials may be used to reinforce and to review previous experiences.

Resource materials which are not available on a state-wide basis are not listed. Your local educational media personnel may be able to assist you in obtaining additional materials.

The constant state of flux characterizing the economy with its effects upon the consumer quickly makes textbooks on consumer mathematics out of date. In addition, the most comprehensive of texts cannot contain sufficient material pertinent to a local situation. For these reasons, suggestions in the guide will be helpful in acquiring local data that will add realism, relevance and interest to the course. There exists, perhaps, no single source of local information better than the community newspaper. The students can relate to regional situations more readily than to textbook abstractions.

The general philosophy of the guide is that Consumer Mathematics should be conducted as a community-oriented laboratory course. Involving the students in the search for information is a valuable lesson in itself. They should be encouraged to give oral or written reports on their findings.

There is no suggested timetable for the units. Perhaps the teacher should be guided by the objectives and the students' reactions. The teacher should feel free to supplement or omit at his discretion. Some of the suggested topics may overlap other areas such as home economics, distributive education and ITC. Interdepartmental cooperation will eliminate superfluous repetition and will provide an opportunity for the sharing of ideas and resources.

The enthusiasm of the teacher cannot be overemphasized. Enthusiasm is contagious. It is suggested that the teacher, as director of research, help the students gather the facts and the student be given the opportunity to judge merits according to his own sense of values.

The related problems are oriented toward present economic situations. The teacher will need to provide additional problems for reinforcement purposes. The most useful problems are those which arise from class investigations and discussions. They present unique opportunities for helping students develop problem-solving techniques. In particular, they give the students a chance to identify, select and locate the mathematical facts needed in order to obtain meaningful solutions.

Throughout the guide problems, questions and activities call for the student to make approximations. This concept is important. In working with approximations, the significant factor is reasonableness as opposed to accuracy.

A class secretary can be an asset to the teacher and to the class. The secretary may write acknowledgements to outside speakers or field trip hosts and order instructional aids. It is suggested that a class secretary be selected from volunteers and that the office be rotated several times during the year. A student serving as class secretary should receive consideration for extra credit.

The classroom bulletin board may be used as an effective teaching aid in many ways. The student-prepared board provides meaningful experience for the students involved and serves to inform their classmates. A teacher-made board may be used as a classroom aid or as a curiosity-arousing device. Many of the suggested activities presented in the guide are readily adaptable to bulletin boards, both student-made and teacher-made.

EVALUATION OF STUDENT PROGRESS

The evaluative process, particularly where student progress is considered, is complex. An objective evaluation of progress is often sought, but proves difficult to obtain. In each unit of the guide, the suggested objectives are stated in observable behavioral terms to help the teacher arrive at an objective evaluation.

Student involvement in evaluation has been employed successfully in some instances. If this technique is to be used, the teacher may wish to duplicate the outline for distribution to the students. The students then have not only a schedule of topics they intend to study, but also, in the objectives, a schedule of goals they should try to meet.

The teacher and/or the class should feel at liberty to add to, take from, or amend the stated objectives according to the local situation. Evaluation should be based on the adopted objectives. Activities suggested in the guide are objective-oriented and the teacher has, thereby, a means of evaluation.

Tests used to measure progress also should be objective-oriented and should be scored accordingly. For example, for classes in which reading levels are low, items should be simply stated so the student is not penalized for poor reading skills unless the teacher adopts reading improvement as an objective.

Notebooks maintained by students serve several purposes. A notebook serves as a valuable reference work not only for the student and his family now, but also for the future years. It has characteristics that can be evaluated consistent with the student's abilities. In addition, the notebook provides an excellent means of review as well as a source from which absentees can recover work missed.

Excessive memory work is discouraged because of the constant changes in the consumer world. The learned person is not so much he who knows all the answers as it is he who knows where to look for the solutions. A technique that has been successfully used is to permit the students to use their notebooks as reference sources on tests. This practice will encourage the student to maintain complete notebooks in a legible and intelligible manner.

In making an objective-based evaluation, the teacher as well as the student should understand that schedules of objectives tend more toward the ideal than toward the minimum. The teacher and students should determine the criteria for satisfactory progress according to individual abilities.

When solutions to problems require unsupported value judgments, objectivity has ended. Therefore, items should be expressed in such a way as to avoid such judgments. For example, "Which offer is less expensive?" is preferred to "Which is best?"

EVALUATION OF THE PROGRAM

The role of the classroom teacher in affecting the success of an experimental program cannot be overemphasized. Only through reactions from the field can weaknesses be noted and the corresponding corrections made.

Each teacher who uses the guide is encouraged to participate actively in its further development by making frank appraisals of each unit as well as by contributing ideas and suggestions that will make them more effective.

A Teacher's Unit Evaluation form is provided at the end of each unit. It is hoped that each teacher will complete the forms or write candid evaluations as units are taught. The guide will attain its stated objectives only as a result of the cooperative exchange of ideas by classroom teachers.

Student involvement in evaluation has been employed successfully in some instances. If this technique is to be used, the teacher may wish to duplicate the outline for distribution to the students. The students then have not only a schedule of topics they intend to study, but also, in the objectives, a schedule of goals they should try to meet.

The teacher and/or the class should feel at liberty to add to, take from, or amend the stated objectives according to the local situation. Evaluation should be based on the adopted objectives. Activities suggested in the guide are objective-oriented and the teacher has, thereby, a means of evaluation.

Tests used to measure progress also should be objective-oriented and should be scored accordingly. For example, for classes in which reading levels are low, items should be simply stated so the student is not penalized for poor reading skills unless the teacher adopts reading improvement as an objective.

Notebooks maintained by students serve several purposes. A notebook serves as a valuable reference work not only for the student and his family now, but also for the future years. It has characteristics that can be evaluated consistent with the student's abilities. In addition, the notebook provides an excellent means of review as well as a source from which absentees can recover work missed.

Excessive memory work is discouraged because of the constant changes in the consumer world. The learned person is not so much he who knows all the answers as it is he who knows where to look for the solutions. A technique that has been successfully used is to permit the students to use their notebooks as reference sources on tests. This practice will encourage the student to maintain complete notebooks in a legible and intelligible manner.

In making an objective-based evaluation, the teacher as well as the student should understand that schedules of objectives tend more toward the ideal than toward the minimum. The teacher and students should determine the criteria for satisfactory progress according to individual abilities.

When solutions to problems require unsupported value judgments, objectivity has ended. Therefore, items should be expressed in such a way as to avoid such judgments. For example, "Which offer is less expensive?" is preferred to "Which is best?"

EVALUATION OF THE PROGRAM

The role of the classroom teacher in affecting the success of an experimental program cannot be overemphasized. Only through reactions from the field can weaknesses be noted and the corresponding corrections made.

Each teacher who uses the guide is encouraged to participate actively in its further development by making frank appraisals of each unit as well as by contributing ideas and suggestions that will make them more effective.

A Teacher's Unit Evaluation form is provided at the end of each unit. It is hoped that each teacher will complete the forms or write candid evaluations as units are taught. The guide will attain its stated objectives only as a result of the cooperative exchange of ideas by classroom teachers.

____
(Date)

____

____

____

Dear Sirs:

Please send me the following free materials for use in my Consumer Mathematics classes:

Title of Material	No. Copies
______________________	________
______________________	________
______________________	________
______________________	________
______________________	________
______________________	________

Thank you for your assistance.

Sincerely,

____
(Name)

____
(Title)

____
(School)

____
(School Address)

____
(City) (State) (Zip)

____
(Date)

____

____

____

Dear Sirs:

Will you please reserve the following films to be shown to my Consumer Mathematics classes:

Title	No.	Date	Alternate Date
______________________	____	_____	______
______________________	____	_____	______
______________________	____	_____	______
______________________	____	_____	______
______________________	____	_____	______

I understand that I am to pay return postage. Please confirm the dates requested. Thank you for your assistance.

Sincerely,

____
(Name)

____
(Title)

____
(School)

____
(School Address)

____
(City) (State) (Zip)

Suggestions for Improving the ____________________________ Unit.

Teacher's Name ________________________________

Grade Level: 9 10 11 12 (Please circle appropriate grade level)

1. Topics you feel should be added

2. Topics you feel should be omitted

3. Resources you found helpful that were not mentioned in the unit

	Title	Address of Source (include zip)
Printed Materials		
Films		

4. Resources mentioned in the unit which were not helpful

Title	Comment

5. What activities or projects do you recommend adding to the unit?

6. What additional mathematical concepts did you teach in this unit?

7. Identify any errors in spelling, grammar or mathematics that you observed.

Please mail to: Mathematics Section
State Department of Public Instruction
Raleigh, North Carolina 27602

MONEY MANAGEMENT

Contrary to popular belief, spending money may be harder than earning it. This is true when a conscious effort is made to develop spending practices which contribute to a maximum of satisfaction and security and a minimum of frustration and distress.

Management of money is often an underlying cause of family tensions and unhappiness. An overextension of credit is only one of the many practices which lead to financial difficulties. Impulse buying, selection of over-priced, low-quality merchandise and a lack of care of personal property items are a few others.

One idea basic to successful money management is the exercise of self-discipline necessary to keep expenditures within the range of income. There are many aspects of this idea - a realistic estimation of available financial resources, identification of personal values and goals, and recognition of a variety of sources where one can obtain guidance.

It is not unusual for students to believe that a planned program for money management must necessarily prevent an individual from buying non-essential items he would like to have. Perhaps the ideas used in this unit will help him realize that such a program can help him find ways to purchase both the necessities and the extras.

A. Objectives

1. The student can identify the problems and advantages of skillful money management.
    a. The student can identify expending beyond his income as an impending crisis.
    b. The student can cite instances which may make it difficult to adhere to a prescribed regime of spending.
    c. The student can cite ways in which wise money management can contribute to his enjoyment of life.
2. The student can classify his essential and non-essential wants.
3. The student can explain that wants are dependent upon individual income, tastes, and age.
4. The student can demonstrate practices that exemplify wise buying.
    a. The student can interpret advertising and labeling intelligently.
    b. The student understands that sales promotions are a form of advertising whose expense must ultimately be borne by the customers.

c. The student includes the shipping time and energy expended in estimating the total cost of an article.

d. The student can relate the quality of merchandise to its intended use.

e. The student can judge the quality of merchandise that is offered on sale.

5. The student can utilize the services offered by private and governmental consumer agencies.

6. The student determines disposable income as the difference between income and deductions.

7. The student uses tables to determine deductions for withholding and social security taxes.

8. The student computes annual income and average monthly income.

9. The student computes income including overtime based on an hourly rate.

10. The student maintains and interprets simple records of income and expenses.

11. The student makes reasonable approximations of cost per unit.

12. The student determines discretionary income as the difference between disposable income and fixed obligations.

13. The student converts weekly amounts to yearly and/or monthly amounts.

14. The student computes average expenditures.

15. The student identifies information needed in order to make reasonable approximations of costs for comparison.

16. The student can express in reasonable terms the ratio of expense to income.

B. Suggested Topics for Study

1. Budgets

   a. Advantages

   b. Disadvantages

   c. Record keeping

   d. Estimating income

      1) Sources

- a) Salary
    - 1) Piecework wages
    - 2) Hourly
    - 3) Overtime
    - 4) Professional
- b) Commissions, bonuses

2) Payroll deductions

3) Disposable income

4) Vocations, training required, and probable income of each

e. Expenditures

- 1) Fixed
    - a) Monthly rent or house payment
    - b) Taxes
    - c) Insurance
    - d) Pledges
- 2) Variable
    - a) Food
    - b) Clothing, clothing care
    - c) Car upkeep and transportation
    - d) Home upkeep and improvement
    - e) Health care
    - f) Education
    - g) Contributions, gifts
    - h) Recreation, entertainment
    - i) Personal allowances for family members
    - j) Savings

2. Buying Practices

- a. Using buying guides from industry, consumer organizations and governmental agencies
- b. Advertising

    c. Labels, brands
    d. Marking prices in code
    e. Warranties and guarantees
    f. Testing laboratories of stores, mail-order houses, industries, companies, consumer organizations
    g. Choosing stores
    h. Seasonal and sales buying
    i. Promotions
    j. Impulse buying
    k. Discounts
        1) Single
        2) Chain

3. Consumer Protection
    a. Governmental agencies
        1) President's Committee on Consumer Affairs
        2) Consumer Advisory Council
        3) Food and Drug Administration
        4) Federal Trade Commission
        5) Public Health Service
        6) Bureau of Narcotics
        7) Securities and Exchange Commission
        8) Bureau of Family Services
        9) Office of Education
        10) Social Security Administration
        11) Interstate Commerce Commission
        12) Federal Communications Commission
        13) Federal Power Commission
        14) Atomic Energy Commission

15) Civil Aeronautics Board
16) Federal Aviation Agency - Department of Transportation
17) Federal Reserve Board
18) Department of Housing and Urban Development
19) Veteran's Administration
20) Government Printing Office
21) National Labor Relations Board
22) Post Office Department
23) Treasury Department
24) Department of Labor
25) Department of Justice
26) Department of Interior
27) Department of Commerce
    a) Census Bureau
    b) National Bureau of Standards
    c) Bureau of International Business Operations
    d) Patent Office
    e) Environmental Science Service Administration
    f) Coast and Geodetic Study
    g) Maritime Administration
    h) Federal Maritime Board
    i) Office of Business Economics
28) Department of Agriculture
29) North Carolina Consumer Council
30) Office of Economic Opportunity
31) Consumer Protection Division of the North Carolina Attorney General's Office

- b. Cooperatives, professional and industrial agencies
    - 1) Consumers' Union
    - 2) Consumers' Research, Inc.
    - 3) Council on Consumer Information
    - 4) Cooperative League of the U.S.A.
    - 5) Better Business Bureaus
    - 6) American Gas Association
    - 7) National Board of Fire Underwriters
    - 8) American Automobile Association
    - 9) American Bar Association
    - 10) American Retail Grocers' Association
    - 11) National Retail Furniture Merchants' Association
    - 12) American Dental Association
    - 13) American Medical Association
    - 14) AFL-CIO
    - 15) National Farm Federation
    - 16) American Home Economics Association
    - 17) National Institute of Dry Cleaning
    - 18) American Institute of Laundering

C. Mathematical Concepts

- 1. Fundamental operations involving rational numbers
- 2. Fractions
    - a. Rational form
    - b. Decimal form
- 3. Percent
- 4. Ratio and proportion
- 5. Properties of rational numbers
- 6. Units of measure
- 7. Approximations

INTRODUCING THE UNIT

Of all the consumer concepts there is none that can be of more value than money management. All too frequently, the need for wise management based on a plan is not recognized until a state of distress has been reached. Historically, unfortunately, those who approach financial oppression are reluctant to admit the existence of the situation and vainly clutch at any straw available to them - even those straws offered by individuals and concerns whose mercenary motives outweigh their moral ideals.

Although there are various legitimate counselors available to help people in financial trouble find relief, such assistance need not be used if a sound schedule of spending and savings is followed. Students will be done a genuine service if, as a result of this unit, they are led to an appreciation of budgeting as the very essence of successful money management.

The following suggested questions might get a discussion started on budgeting:

. What is a budget?

. What are some advantages of budgets? Are there ever any disadvantages?

. Do you need a budget?

. How much earned income can people in different vocations expect to have available?

. For what reasons, other than money, do you plan to work?

. How does the budgeting of time compare with the budgeting of money?

. What should you budget?

. Do you have a mental budget of how you spend your recreational time?

ESSENTIALS AND NON-ESSENTIALS

Almost everyone will agree that there are certain goods and services basic to the support of life. If an attempt is made to enumerate these basics, unamity will be reached on food, clothing, and shelter. Unanimity dies when the list is extended, for not everyone will agreee on other basics. It is in most instances a matter of value judgment based on the past experiences of the individual making the judgment. With such a heterogeniety of individual experiences, there is small reason to be surprised if the list of basics varies from person to person. That which is luxury to one is essential to another; that which is a need for one is a want for another; that which is desired by one is not desired by another.

Consumer texts tend to classify expenditures as being for essentials and luxuries or for needs and wishes. Some, unfortunately, attempt to define just which expenses are for needs, and this list usually is a primitive list supplemented only by health services.

Perhaps the idea of budgeting will become more meaningful if students gain some appreciation that needs are just as individual a matter as are wants.

BUDGETING

A personal or family budget is usually interpreted as a plan for the coordination of resources and expenditures. Such a plan need not and should not be complex. It should not make one feel that he is living under sentence. A simple, flexible budget tailored to meet the changing needs and aspirations of an individual or family will generally prove to be a workable plan.

Many benefits can be derived from a budget. It will provide ways to achieve dreams. It will help curtail wasteful spending and channel that money to more satisfying purchases. It will help one spend according to income so the money does not end before the month does. Perhaps one of the most significant benefits of a budget is that it compels one to take a long hard look at what he wants most out of life.

- How much money did you spend last week? What items did you buy? Classify your expenditures as essential or non essential. Can you remember how you spent all of the money?
- Does a family always spend the same amount on budgeted items each week?
- Have the class create a role-playing situation in which a family decides they should establish a budget.

A CLASS ACTIVITY IN BUDGETING

There are three steps usually followed in budgeting. These are estimating the income, planning how the income will be used, and putting the plan into action.

The following activity illustrates each step:

1. Have each member of the class submit an estimate of the income for the average American family of four. Average these and use this amount as the income for this activity.
2. Let the class decide the kinds of expenditures the family will have.
3. After obtaining the amount of income and the different classifications of expenses, let each student prepare a budget for one month. When this is complete, take an average of each expenditure.
4. From the average class budget, divide the food allowance into four parts. Have each student plan menus for one week. Let them "mock-shop" either from newspaper ads or from a local grocery store for the needed groceries. Was the food allowance sufficient? Your class will not only enjoy this as an activity, but will find that they have used many mathematical concepts in doing so.

BUYING PRACTICES

. When you need toothpaste, where do you purchase it? Why do you choose that store? How do you decide what brand to buy?

. What was the last item you bought? What factors influenced your choice of store, brand, and price paid?

The discussion of these and similar questions will reveal that the class members presently have a variety of buying habits. This is an area where each student can contribute some ideas to the class. Do some of your students work in mills? They may know of outlet stores where the public can make good buys. If some of your students are in sales work, they might explain the pricing and dating codes used on merchandise. Perhaps they can also advise the class about seasonal sales, how the merchant selects goods for sale, and how the consumer can get more value for his sales dollar.

Additional Assignments and Discussion Questions:

. Investigate state and federal laws that protect the consumer.

. Assign individual reports on consumer protection agencies. Ask students to try to include (1) the origin of the agency; (2) whether it is local, state or national in scope.

. Find instances of recent governmental action in the area of consumer protection.

. Study the Pure Food and Drug Act. What connection does Upton Sinclair's novel, The Jungle, have with this law?

. Why does it cost more to buy a loaf of bread at 10:30 p.m. from the local convenience store than from the superkarket at 10:30 a.m.?

. What is impulse buying? Compare a trip to a discount store to Grandpa's study of the "wishbook."

. How does shiplifting affect the prices?

. What are the advantages of a shopping list?

. Investigate labels, tags, packaging and instruction booklets for equipment and appliances. Are testing laboratories mentioned?

. What part does the proper maintenance of items of clothing and equipment play in getting the most for the consumer's dollar?

. Does the location and arrangement of articles in a store affect their sale?

. Trading stamps and contests are used by some merchants to promote sales. How do these affect you as a consumer?

. How does vanity influence the pricing, labeling and sizing of merchandise?

- What are comparison shoppers? Why do some stores hire them?

- Have the students try some role-playing centered around shopping etiquette and unwise buying practices. If you have distributive education students in the class, they should have a lot of information to contribute.

- Discuss some ways that buying practices have changed since the students' grandparents were teenagers. Encourage the students to ask their grandparents for details.

- Ask the class to try a little crystal ball gazing and predict the changes that will occur in buying practices by the time their grandchildren are teenagers.

- Many people are brand buyers. Are your students convinced they can distinguish between certain brands of a product? Have the students test each other to see if they can recognize one brand from another. (Bread, soft drinks, and cookies are some good test items.)

- Discuss the latest fads on the market. Are teenagers the only people influenced by fads?

- The student may want to design a questionnaire around the following ideas for a school survey: To what extent do you shop for brand names? How much do you let style rather than usefulness decide what you buy? How do you usually pay for purchases - cash, 30-day credit, lay-away, or installment plan? What items do you buy because you think your friends expect you to? How much money do you feel you spent foolishly last year?

- What is planned obsolescence?

- For what types of purchases is style a dominant influence?

ADVERTISING

The consumer and the seller use advertising for the same purpose - information. The seller is interested in information as a tool of persuasion and the consumer is interested in information which provides guidance for wise buying decisions. However, the advertising excesses practiced by some individuals and firms create the necessity for careful consumer scrutiny of advertising materials.

"If words establish a claim, I claim a crown," Ansari wrote in 1075 A.D. Today's ad writers are certainly following his lead. Our interest lies in the way they use words of size and number to substantiate claims. The students need to develop an awareness of the wide use of mathematical ideas in today's advertisements. They need to recognize when quantitative words are being used primarily for psychological value and when the use of such words and symbols is mathematically sound. In addition, if they can recognize that the impressions received from a picture can be altered by changing sizes and shapes of objects in the picture, they will be able to make better use of advertising as a source of information for wise buying decisions.

Activities/Questions

- Ask someone from a local television station to tell the class about regulations the station must follow when advertising, such as the number and length of commercials in each half-hour period.

- What major services does advertising perform?

- What are the major criticisms of advertising?

- Suppose the town newspaper(s), radio and T.V. station(s) decided not to run any advertisements for a month. What changes would this make in your life?

- Find examples of advertisements where the advertiser has used a certain unit measure because a large number (example, 40 oz. instead of 2 1/2 lb. or a small number (6 months instead of 26 weeks) seems more desirable to the consumer. (Don't forget radio and television commercials.)

- Find sale advertisements which use percent in the text. If enough information is available, check the numbers in the ad. (Example: If the price of a pair of shoes is reduced from $15.90, was the original price reduced 25%? If $25 dresses are reduced by 1/3, what will the new price be?)

- Look up recent FTC rulings concerning advertising practices.

- Which would you choose, if you had your choice of buying (a) a detergent with K-29 enzymes or K-70 enzymes; (b) a half-quart of cola or a pint of cola?

- List the advertisers in a copy of a magazine published for the general public, for example, *Life*, *Reader's Digest*. Compare this with a list of the advertisers in a magazine published for a group with a special interest such as *Popular Mechanics*, *Scientific American*, and *Hotrod*. Discuss the reasons why the advertisers might have advertised in one and not the other. Which ones chose both of them? Why?

- Find the costs for use of different advertising media - e.g., the cost per inch of display advertising in the local newspaper, a minute's time on the radio and on television, a month's use of a billboard, a page-sized advertisement in a national magazine and a sky written message.

- Collect examples of ads which are:

1. Primarily informational
2. Based on common human fears and worries
3. Based on common human desires and goals
4. Playing up the advantages of the package rather than its contents
5. Spoofing the product
6. Trying to convince the customer that a product which performs the same function as many others of the same type really has properties not found in the others
7. Presenting a company or industry in a favorable light, instead of a product
8. Using a testimonial
9. Comparing one product point by point with a competitor's product
10. Designed primarily to catch attention and give no real information about the product
11. Using number ideas in a valid way
12. Using number ideas in a misleading way

13. Using shapes of objects in a picture to produce the wrong impression of the size of an article
14. Considered by the student to be misleading for other reasons

. How do advertising practices in other countries differ from ours? The foreign language department may have magazines and materials they will share with you.

. Have a student tape a commercial he has heard on radio or T.V. that appeals to him. Play it to the class and get another student's reaction.

. Ask students to list brand names which have become part of the vernacular. Can brand identification become too successful?

. Have one group of students make a list of slogans used in advertising, such as, "taste that beats the others cold." Let the rest of the class try to identify the brand name associated with the slogan. Why do companies use slogans?

. Ask each student to choose an item which he would like to seel through advertising in the classified section of his local paper. Prepare advertising and determine the cost using rates from his local newspaper.

RELATED PROBLEMS

Harry Head, at the age of ten, received his first allowance, $1.00 a week. His father demanded that Harry place 25 percent of this allowance in a savings account for his college education. He is now 16 years old and has an allowance of $6.00 a week. His father still wants him to save 25 percent of his allowance.

a. At the age of 10, how much did Harry save per week? (Answer: 25¢) per year? (Answer: $13)

b. How much does he save now? (Answer: $1.50 weekly; $78 yearly)

c. In a school year of 36 weeks, how much more does Harry save now than he did when he was 10 years old? (Answer: $45)

Theresa Green has definitely decided to buy a formal gown for the prom. It costs $60. She has no money, but the prom is 15 weeks away.

a. How much must she save each week in order to buy the dress? (Answer: $4)

b. If she should earn $15 weekly, what fraction of her earnings must she save for the dress? (Answer: 4/15)

c. To the nearest whole percent, what percent of her earnings will she be saving? (Answer: 27%)

In an effort to boost business, the Savings Mart offered any tire for sale at 1/6 off the usual price. How much would a customer have to pay for a tire that normally sells for:

a. $24 (Answer: $20) b. $36.60 (Answer: $30.50)

c. $16.80 (Answer: $14.00) d. $21.96 (Answer: $18.30)

To the nearest tenth of a cent, how much will each ounce of food cost the purchaser?

Weight of Can	Cost of Can	Answer
a. 12 oz.	$ .40	3.3¢
b. 12 oz.	.58	4.8¢
c. 12 oz.	.72	6.0¢
d. 1 lb.	1.22	7.6¢
e. 3 1/2 oz.	.44	12.6¢
f. 1 lb., 10 oz.	1.19	4.6¢

M. T. Wallet wanted to budget his earnings of $6.80 a week. If one half was to be spent on clothes and the rest was divided equally between savings and spending, how much was budgeted for each of the three items? (Answer: clothing - $3.40; savings - $1.70; spending - $1.70)

You can purchase a six-bottle carton of king size Kool Kola for 49¢ a carton or the giant size for 79¢ a carton. If the king size bottle contains 12 ounces of Kool Kola and the giant size contains 16 ounces, which is the more economical buy? (Answer: king size carton)

James recently accepted a job with the Filler-Up Oil Company as a sales representative. His regular hourly pay rate is $1.96. Filler-Up pays their employees time and a half for all hours they work beyond 40 hours during any one week. Last week, James worked 48 1/2 hours. How much was his salary before deductions? (Answer: $103.39)

Sally works part time at the Twistee Pretzel Shop as a pretzel twister. She receives 1/2¢ for each pretzel she twists. Last week her output was as follows: Monday - 296; Tuesday - 444; Friday - 320; Saturday - 1258. What was her salary before deductions? (Answer: $11.59)

The Screamin Meanies, a talented vocal group, receive a 12 1/2% commission on their record sales. Last month 18,000 copies of their $4.95 album, "Songs to Study By," were sold. How much did they receive from last month's sales? (Answer: $11,137.50)

Jack B. Nimble works at the Flameless Candle Works as a wick trimmer. He spends 30% of his income for food, 15% for clothing, 23% for shelter, 7% for recreation, 6% for education, 4% for miscellaneous; and the remainder is saved. If Jack's weekly earnings are $148, how much can be saved in one year? (Answer: $1154.40)

Colonel Miller, operates a water driven mill, at which corn is ground into meal. Mrs. Miller keeps books for him. She suffers from asthma. They have a 15 year old son. A. C. Cord is a free lance electrician. His wife, Polly Esther Cord (often tired), works as a beauty operator. They have a son 15 months old.

Classify these goods and services as necessities, luxuries, or neither for the following. Explain your selection.

Telephone	Mr. Cord	________	Col. Miller	________
A second car	Mr. Cord	________	Col. Miller	________
Uniforms	Mrs. Cord	________	Mrs. Miller	________
Adding machine	Mrs. Cord	________	Mrs. Miller	________
Voltage meter	Mr. Cord	________	Col. Miller	________
Facial	Mrs. Cord	________	Mrs. Miller	________
Television	The Cords	________	The Millers	________
Air conditioner	The Cords	________	The Millers	________
Pick-up truck	The Cords	________	The Millers	________
Diaper service	The Cords	________	The Millers	________

Suggested Reading Assignments:

"How Do Those Joneses Do It?" CHANGING TIMES 22:7-11, April, 1968.

"How Do You Rate at Handling Money?" FARM JOURNAL 92:26+, April, 1968.

Porter, Sylvia, "Spending Your Money," See issues of LADIES HOME JOURNAL.

Listen, R. A. "Business Wants High School Graduates," PTA MAGAZINE 62:2-4, March, 1968.

Berland, T. and Seyler, A.S. "Teeth Care Teenagers," (excerpt from "Your Children's Teeth"), TODAY'S HEALTH 46:66-72, March, 1968.

"Learning How to Buy," New York State Commerce Department Program for Teenagers, BUSINESS WEEK, pp. 170-171, March 30, 1968.

"Around the World Bargain Hunt," NEA JOURNAL 57:48-49, January, 1968.

Brothers, J. "What Every Woman Should Know About Shopping," GOOD HOUSEKEEPING 166:45-46+, April, 1968.

Hamman, M. "How Far Will $3,000 Go?" HOUSE AND GARDEN 134:114-115+, October, 1968.

Lobsenz, N. M. and Blackburn, C. W. "Hidden Meanings of Money in Marriage: Excerpt from 'The First Ten Years of Marriage: A Guide for Successful Family Living,'" LADIES HOME JOURNAL 85:34+, July, 1968.

Schimel, J. L. "How To Stop Fighting Over Money," REDBOOK 130:72-73+, November, 1967.

"What A Young Family Should Do With Its Money: Advice by Financial Experts," CHANGING TIMES 21:17-21, December, 1967.

"Advice for the Family Treasurer," CHANGING TIMES 22:11-13, June, 1968.

RESOURCES

Small Business Administration Office Charlotte, North Carolina	Stimulating Impulse Buying for Increased Sales - Publication #109. (free leaflet)
Educational Division Institute of Life Insurance 277 Park Avenue New York, New York 10017	A Date With Your Future (free booklet; maximum - 25 copies)
Some Local Banks	Personal Money Management (free booklet)

FILMS:

Mrs. Jean Way Schoonover 551 Fifth Avenue New York, New York 10017	Behind The Label - Or The Case of Mrs. Harridan's Hat (13 1/2 min., color) Combines comedy with solid information about labels on canned foods.
Association Films, Inc. 2227 Faulkner Road, N.E. Atlanta, Georgia 30324	A Penny Saved #S-540 (14 min., color) Emphasizes that true thrift is wise management.
	Personal Financial Planning and The Wise Use of Credit #S-424 (22 min., color) A series of two films discussing money management.
WTAR-TV Corporation 720 Boush Street Norfolk, Virginia	Best T.V. 1968 Commercials

FILMSTRIPS:

Household Finance Corporation Prudential Plaza Chicago, Illinois 60601	A New Look at Budgeting (88 frames)
	Your Money's Worth in Shopping (59 frames)
	Focus on Food Dollars (73 frames)
	Managing Your Clothing Dollar (63 frames)

TRANSPORTATION

Should there be anyone in your class who does not already own a car, you can rest assured that he is thinking about it. Time was when a home was the teenager's dream - a home first, and then a car to get away from it. Now, the order is reversed: a car first, and then a home - perhaps to have a place to park.

There is small wonder that young people are interested in cars. Consider these "automobillions." In 1968, U.S. motorists paid out 89.8 billion dollars on their 82,821,000 automobiles. They consumed 81 billion gallons of gasoline while driving 96.5 billion miles in the process of which they killed 52.5 thousand of their neighbors (including 9300 teenagers) and injured 4 million others (including 877 thousand teenagers). U.S. lending agencies were holding 31.2 billion dollars in automobile paper, and the motor vehicle industry was employing 13.5 million workers. When a country is so extensively on the move, it is not difficult to understand why its youngsters have wheels in their heads.

Leaving other "why's" to the psychologists, let's try to capitalize on the fact that the students are interested.

A. Objectives

1. The student realizes that there are costs other than purchase price relative to automobile ownership, operation and maintenance and uses arithmetical operations and processes to determine or to estimate the aggregate cost.
2. The student acquaints himself with various common carriers and other commercial transportation and is able to read timetables, schedules of fares, and maps and to use arithmetical processes to compare the costs of commercial transportation where money, time and convenience are considered.
3. The student is able to understand from graphs and tables of data that automobile accidents are costly to all consumers and to understand why insurance rates differ for the several driver categories.
4. The student uses reasoning in supporting his ideas of the advantages and disadvantages of buying a new or a used car.
5. The student recognizes that time and convenience are commodities that cost money.
6. The student can distinguish between liability and collision insurance and understands the meaning of "deductible" as applied to automobile insurance.
7. The student is acquainted with the North Carolina policy of assessing drivers points for unsafe car operation, and he understands the effects of points on his liability insurance premiums.

8. The student applies the definitions of the terminology of the unit.

9. The student is able to employ his knowledge of individual topics in the problem solving.

B. Suggested Topics for Study

1. Ownership of an automobile

    a. Purchasing a car

        1) Comparing window sticker price to actual amount to be financed

            a) Sales tax
            b) Excise tax
            c) Registration fees
            d) Down payment or trade-in allowance

        2) Advantages and disadvantages of buying a new car

        3) Advantages and disadvantages of buying a used car

    b. Continuing costs

        1) Operating expenses

        2) Fixed expenses

    c. Insuring a car

        1) North Carolina laws

        2) Bodily injury liability

        3) Collision

        4) Property damage liability

        5) Comprehensive

        6) Medical payments

        7) Uninsured motorists

        8) Automobile clubs

    d. Safety with your car

2. Commercial transportation

    a. Leasing and renting an automobile

    b. Traveling by bus, train, airplane, or boat

    c. Shipping goods by parcel post, express or freight

3. Trip planning
    a. Choosing a route
        1) Tourist service
        2) Travel agency
    b. Estimating trip expenses
    c. Choosing a mode of travel

C. Mathematical Concepts

1. Fundamental operations with whole numbers, common fractions, decimal fractions
2. Computing interest
3. Using percent
4. Estimating answers
5. Checking answers
6. Using tables
7. Reading maps, timetables
8. Computing mileage
9. Comparing data
10. Using statistics
11. Making graphs

INTRODUCING THE UNIT

To get this unit rolling (sorry about that) you may begin with resources on hand - the students. Their conceptions and misconceptions may well define your goals for the unit. Here are some suggested leading questions and activities:

- Compile a list of expenses related to automobile ownership. Keep in mind that this list will be limited by the student's experiences. It will probably grow once they begin their investigations.
- Prepare a list of desirable features you would like to have in a new car.
- Prepare a list of things to look for and things to look out for in buying a used car.
- What makes a car a "used car"?

- Discuss the Jekyll-Hyde transformation in some drivers when they change from pedestrian to driver.
- How can you determine the gas-mileage of a car? (or gallons per mile for those with thirsty engines)
- What factors influence the cost of insurance?
- What reasons do people have for wanting a particular make of car?

These student activities should pave the way for some lively discussions and get the students ready to do some in-depth investigating.

PURCHASING A CAR

Activities/Assignments/Questions

- Which car to buy - new or used? Explain.
- List some factors influencing the value of a car.
- Does a car's value stay the same?
- What is depreciation? Appreciation?
  (Some cars do appreciate. In certain cases a car may be worth more than its original purchase price. Restored antique cars are an example. Not quite so antique a car is the Edsel!)
- Find out what taxes are assessed on the new car buyer and the used car buyer.
- What extras in the form of charges does a car buyer have to pay?
- Visit an automobile showroom and report on:
  - The price of a car of your selection if you took delivery at the factory.
  - The delivered price
  - The items contributing to the delivery charge
  - The kind of warranty
  - Financing: down-payment required
- Study Consumer Reports articles on your favorite car. Compare findings with advertisements.

Financing

It may serve a useful purpose to have the students compute the true annual rate of interest even though the law requires the lender to give this information to the borrower. (See unit on Credit)

For the related practices in computations dealing with car purchases, you may want to do some problem construction. Base the problems on data gathered by the students locally concerning cars in which the students have a real interest.

CAR OPERATION

The objective in this sub-topic is not to teach the student that it costs money to operate a car. There is no objection to that point being made if there is anyone who has not already had that revelation brought home through experience. While most of the students realize that "it takes mazooma to make the mare go," very few of them will have a sound idea of how much. Do you?

- How much does it cost to own and operate a car for a year?
- How much did it cost to drive to school this morning?
- How much does it cost to operate our school buses for one day?

These introductory questions lead into discussions and activities - some of which involve math! Suggested activities and leading questions:

- How do you determine the cost per mile for operating an automobile? By a sample mile? By finding an average cost of many miles?
- List expenses associated with car ownership and operation. You may or may not wish to include depreciation. If you leave it out, you should adjust the cost per mile. Here is a chance to average repair bills.
- Compute the cost of operating a car for a mile. Some agencies allow 10¢ per mile for use of a private car and some allow 8¢. How do these allowances compare with your investigations?

INSURING THE CAR

Introductory Activities/Assignments/Questions

Hopefully the students have already found insurance to be one of the greatest factors in the cost of owning and operating an automobile. Some of our students are especially affected by, shall we say, somewhat expensive insurance premiums. They will perhaps want to find out why the premiums are so high and what they may do to help lower them. These preliminary questions are suggested to get a "reading" on the ideas of the students concerning automobile insurance.

- What does insurance cost?
- What can an individual do to change his rate?
- How are rates determined?
- What kinds of automobile insurance are available?
- When a car is being financed, is insurance required? Explain.
- Why does the State require liability insurance?
- How are claims settled?
- What is an insurance policy?

These opening questions should promote discussion and prepare the way for a more analytical look at automobile insurance.

Suggested Activities for Follow-up Investigation:

- Study an automobile insurance policy. You may have your students secure specimen copies of insurance policies. Rather than merely read the policy with or to the class, you may prefer to assign individual students the responsibility of studying the several sections. These students may then serve as a panel of experts the following day. To add interest and to involve the entire class, you may wish to assign to the remainder of students the entire policy with instructions to prepare questions so they can put the experts on the spot.

  Note: If a question is asked which the "experts" can't answer, GOOD! This is a question to ask your visiting agent when he comes.

  THE TEACHER SHOULD FEEL FREE TO ADMIT THAT HE DOESN'T KNOW.

- Make graphs showing frequency of accidents among various age groups. This can be extended to time of day, day of week, types of accidents, etc. Many similar projects which involve graphing can be created.

- Investigate the point system of insurance rating. Have a panel discussion.

These activities will afford opportunities for the practice of the mathematics essential to insurance buying. The source books have some good supplementary problems as well as additional discussion materials.

- Discuss the difference between collision and liability insurance.

- A typical problem of collision insurance premiums for high school boys:

  A boy has a 1969 Ford Fairlane 500, 8 cylinder, automobile. He is in insurance class 2C (See Table 2). Ordinarily the manual rate is $158 for $50 deductible collision. (The insured pays the first $50 for any claims.) However, the insured pays only $142 because he has completed driver's training. Estimate the percent of the reduction in price. (Answer - approximately 10%)

  Should he decide to buy a $100 deductible collision policy, the manual rate is $106. About how much would the boy have to pay since he has completed driver's training? (Answer - $95, since discounts are rounded to the nearest dollar.)

  This problem could be extended to include additional coverage such as comprehensive, full coverage: $23, and towing and labor costs: $2 for $25 limit.

The figures used in this problem were obtained from the North Carolina Insurance Commission - Table 1 and Table 2 were obtained from the same source.

AUTOMOBILE LIABILITY
ANNUAL PREMIUMS FOR $10,000/$20,000 BODILY INJURY
AND $5,000 PROPERTY DAMAGE LIMITS
EFFECTIVE APRIL 9, 1969

ASHEVILLE, CHARLOTTE, DURHAM, GREENSBORO, HIGH POINT
RALEIGH, WILMINGTON AND WINSTON-SALEM TERRITORIES

			DRIVER RECORD POINTS									
CLASS	SAFE DRIVER	BASIC MANUAL	1	2	3	4	5	6	7	8	9	10
1A	$58.00	$63.60	$67.00	$77.00	$86.00	$96.00	$111.60	$127.20	$142.80	$159.60	$175.20	$190.80
1B	61.40	69.20	72.60	82.60	93.80	103.80	121.60	138.40	156.20	173.00	190.80	207.60
1C	83.60	92.60	97.00	111.60	125.00	139.40	161.80	185.20	208.60	232.00	254.40	277.80
2A	109.40	121.60	127.20	146.20	164.00	183.00	213.00	243.20	274.40	304.60	334.60	364.80
2C	177.40	196.40	206.40	235.40	265.60	294.60	344.80	392.80	443.00	491.00	541.20	589.20
3	86.00	96.00	101.60	115.00	130.60	144.00	168.60	192.00	216.60	240.00	264.60	288.00
1AF	43.60	48.00	50.20	58.00	64.80	72.60	84.80	96.00	108.20	120.60	132.80	144.00
2AF	81.40	90.40	94.80	108.20	121.60	136.20	158.40	180.80	204.20	226.60	248.80	271.20
2CF	132.80	148.40	156.20	177.40	200.80	223.20	260.00	296.80	333.60	371.60	408.40	445.20
ALL OTHER TERRITORIES												
1A	$58.00	$63.60	$67.00	$77.00	$86.00	$96.00	$111.60	$127.20	$142.80	$159.60	$175.20	$190.80
1B	58.00	63.60	67.00	77.00	86.00	96.00	111.60	127.20	142.80	159.60	175.20	190.80
1C	83.60	92.60	97.00	111.60	125.00	139.40	161.80	185.20	208.60	232.00	254.40	277.80
2A	109.40	121.60	127.20	146.20	164.00	183.00	213.00	243.20	274.40	304.60	334.60	364.80
2C	205.40	228.80	240.00	274.60	309.20	343.80	400.60	457.60	515.60	572.60	629.40	686.40
3	86.00	96.00	101.60	115.00	130.60	144.00	168.60	192.00	216.60	240.00	264.60	288.00
1AF	43.60	48.00	50.20	58.00	64.80	72.60	84.80	96.00	108.20	120.60	132.80	144.00
2AF	81.40	90.40	95.80	108.20	121.60	136.20	158.40	180.80	204.20	226.60	248.80	271.20
2CF	155.00	171.80	179.60	206.40	232.00	258.80	301.20	343.60	386.00	430.60	473.00	515.40

NOTE: ADDITIONAL PREMIUM IF UNINSURED MOTORIST COVERAGE INCLUDED. ADDITIONAL PREMIUM REQUIRED IF HIGHER LIMITS OF LIABILITY AND MEDICAL PAYMENTS PROVIDED.

RATES FOR HIGHER LIMITS

$25/50,000	136% of Basic Rate
$50/100,000	145% of Basic Rate

TABLE 1

PRIVATE PASSENGER CLASSIFICATIONS

NORTH CAROLINA

Basic rating classifications of individually owned private passenger vehicles or trucks of 3/4 ton capacity or less not used in business:

Class 1A	No male driver under 25, used for pleasure only.
Class 1B	No male driver under 25, driven to or from work a distance of less than 10 road miles one way.
Class 1C	No male driver under 25, driven to or from work a distance of 10 or more road miles one way.
Class 2A	One or more male drivers under 25, not owner or principal operator; also car owned or operated by married male under 25.
Class 2C	Car owned or principally operated by unmarried male under 25.
Class 1AF	Farm car, without male drivers under 25, used for pleasure only.
Class 2AF	Farm car with one or more male drivers under 25, not owner or principal operator; also farm car owned or operated by married male under 25.
Class 2CF	Farm car owned or principally operated by unmarried male under 25.
Class 3	Used for business, no male driver under 25; also car owned by partnership or corporation.

Table 2

THE NORTH CAROLINA SAFE DRIVER INSURANCE PLAN

The Safe Driver Insurance Plan was originally authorized by the 1961 General Assembly. The Commissioner of Insurance was directed to establish a Plan which "distinguishes between classes of drivers having safe-driver records and those having a record of chargeable accidents; a record of convictions of major traffic violations; or a combination of both." Thus the Plan is based on the premise that drivers who operate automobiles in a lawful manner and safeguard lives and property deserve recognition in terms of reduced automobile insurance costs.

The 1967 General Assembly directed the Commissioner of Insurance to develop a more equitable Plan. This new 1968 Plan applies to all auto liability insurance policies written in North Carolina for privately owned passenger cars, personally owned or farm operated trucks with load capacities of 1500 pounds or less and to motorcycles, scooters and other similar private passenger type vehicles.

What Points are Assigned:

The Plan provides that insurance companies review the driving record for all drivers of the vehicles to be insured for the three years preceding the date of application for or preparation of the renewal of their auto insurance. Points are to be assigned as follows:

Convictions	Points
Manslaughter	10
Prearranged Highway Racing	10
Hit and Run, Bodily Injury	10
Highway Racing	8
Drunken Driving	8
Transporting Whiskey for Sale	8
Driving after License Suspended or Revoked	6
Hit and Run, Property Damage Only	3
Reckless Driving	3
Passing Stopped School Bus	3
Speeding in Excess of 75 mph	3
Illegal Passing	1
Speeding in Excess of 55 mph but not over 75 mph	1
Following Too Close	1
Driving on Wrong Side of Road	1
Any Other Moving Traffic Violation Resulting in Driver's License Suspension	1

For all other minor moving traffic violations, any family with two such convictions and no other point assignment is to be rated at the basic rate. One point is to be assigned for each such conviction in excess of two.

Accidents

Two points are assigned for each chargeable accident resulting in bodily injury or death, damage in excess of $100 to the property of others or to the owned auto. One point is assigned for two or more chargeable accidents - those resulting in property damage of $100 or less.

Under the Plan the word "chargeable" means "negligent" and NO points are to be assigned for any accidents where the operator is free of negligence.

Table 3

How are Points Evaluated?

Once the "Driving Record Points" have been accumulated, the amount of credit or debit that applies is as shown below:

Points Accumulated		Change in Insurance Cost
0	reduction of	10%
1	increase of	5%
2	increase of	20%
3	increase of	35%
4	increase of	50%
5	increase of	75%
6	increase of	100%
7	increase of	125%
8	increase of	150%
9	increase of	175%
10	increase of	200%

When two or more vehicles to which the Safe Driver Insurance Plan applies are insured in the same policy, if the drivers have no points, the cost of insurance is reduced 10% for all insured vehicles. All applicable points are accumulated and the resulting increase is only applied to the highest rated vehicle and the cost of insurance for all other vehicles is still reduced 10%.

Here are the answers to some of the most frequently asked questions:

1. Q. Whose driving records will be used?
   A. The three year record of the owner, operators residing in the same household and the principal operator even if he is not a resident of the household.

2. Q. Suppose the principal operator has not been licensed for three years?
   A. If no points are assigned, the reduction under the Plan cannot be applied until the principal operator has been licensed for three years and preserved his clean record.

3. Q. Do traffic violation convictions in other states count?
   A. Yes. Any conviction in any state is included in the driving record and used in establishing the insurance rate under the Plan.

4. Q. Is a car owner under 25 years of age eligible for both driver training and Safe Driver discounts?
   A. Yes. However, he would not earn the Safe Driver discount until the end of three years driving experience.

5. Q. Can a motorist whose insurance is now in the Assigned Risk Plan qualify for a Safe Driver Discount?
   A. Yes.

6. Q. Would points be assigned for injury to my finger when I shut the trunk of my car?
   A. No. The accident must occur while a private passenger car is being operated - a moving traffic accident.

Table 4

COMMERCIAL TRANSPORTATION

With quite a bit of national advertising going on concerning "Number 1," "Number 2," "Rent-A-Trailer/Truck," it may be that some of your students will have an interest in investigating the area of commercial transportation. Since one out of every five families moves each year, your students may need to find out something about moving and movers.

You might suggest that they investigate:

- Rent-A-Car plans
- Trailer rentals
- Lease-A-Car plans
- Commercial trucking
- Rail shipping; boat shipping; air freight
- The cost of moving. On what bases are the charges determined?

These activities make excellent written or oral reports. Bulletin board projects to follow the reports can be easily envisioned.

PLANNING A TRIP

A road map means a lot of different things to different people. To some of them a road map is a device that gives all directions EXCEPT how to refold the *#&* thing. Perhaps we should include refolding a map among our objectives of this sub-unit. Regardless of where YOU stand concerning road maps, this simple (and FREE) thing can be a most effective teaching tool. It involves a respectable quantity of mathematical concepts. The road map is the principal teaching device in this suggested topic. (By the way, it may be a teacher teaching device, too.)

Introductory Assignments/Activities/Questions

- How much would it cost to drive to the Grand Canyon? How long would it take?

- What towns would you pass through on a trip to ____? (Put in somewhere other than your locality.)

- What are some of the hazards in taking a spontaneous trip?

- What information does a road map give us?

- Table 5 can be used as a problem source. For example: What things should you consider in planning a trip from Raleigh, North Carolina, to New York?

  1. Compare ticket prices for travel by bus, by train and by plane.
  2. What percent would you save by buying a round trip ticket?
  3. What is the time involved in traveling from Raleigh by air, by train, and by bus? Does the return trip take the same amount of time?
  4. What would be the advantages of each mode of travel?

RALEIGH - NEW YORK SCHEDULES

AIR SCHEDULE

From Raleigh-Durham

Leave	Arrive	Flight No.	Class	Meals	Stops
7:25 a	8:42 a L	584	F	B	Nonstop
2:30 p	3:46 p N	386	FY	-	Nonstop
3:30 p	5:43 p L	898	FY	-	One Stop
4:45 p	5:59 p N	582	FY	-	Nonstop
9:10 p	10:30 p L	253	FY	-	Nonstop

From New York

7:35 p L	8:25 a	387	FY	B	Nonstop
2:12 p L	3:42 p	228	FY	S	Nonstop
5:01 p N	6:27 p	369	FY	-	Nonstop
9:30 p L	10:55 p	569	F	S	Nonstop

Airports

L	La Guardia
N	Newark

Class

F	Jet First Class
Y	Coach (Jet)

Meals

B	Breakfast
L	Lunch
S	Snack

Rates

First class	(F)	$41.00
Coach	(Y)	34.00
Round trip		48.00

Table 5

Table 5 Continued:

BUS SCHEDULE

Read Down			Read Up	
11:00 p.m.	Lv.	New York, N.Y.	Lv.	4:40 a.m.
11:45	Lv.	Philadelphia, Pa.	Ar.	3:50
2:35 a.m.	Lv.	Baltimore, Md.	Ar.	12:55
3:30	Ar.	Washington, D.C.	Lv.	12:30 a.m.
4:00	Lv.	Washington, D.C.	Ar.	11:55
		Fredericksburg, Va.		
5:55	Ar.	Richmond, Va.	Lv.	9:50
6:00	Lv.	Richmond, Va.	Ar.	9:40
6:30		Petersburg, Va.		
9:00 a.m.	Ar.	Raleigh, N.C.	Lv.	6:40 p.m.

Rate - one way	$19.90
- round trip	$35.85

TRAIN SCHEDULE

Read Down			Read Up	
9:00 p.m.	Lv.	New York (Penn. Sta.)	Ar.	3:35 p.m.
9:15	Lv.	Newark	Lv.	3:22
10:10	Lv.	Trenton	Lv.	2:38
10:39	Lv.	N. Philadelphia	Lv.	2:09
11:01	Lv.	Philadelphia	Lv.	1:58
	Lv.	Wilmington, Del.	Lv.	1:30
	Lv.	Baltimore, Md.	Lv.	12:26 p.m.
1:35 a.m.	Ar.	Washington	Lv.	11:45
2:10	Lv.	Washington	Ar.	11:00
4:25	Ar.	Richmond, Va.	Lv.	8:50
5:10	Lv.	Richmond, Va.	Ar.	8:35
8:40 a.m.	Ar.	Raleigh, N.C.	Lv.	5:15 a.m.

Rates

Coach		First Class		Sleeper Sleeper Changes		K (One way)		
One way	Round trip	One way	Round trip	Lower Berth	Roomette	Bedrm.	Suite	Compt.
22.38	43.53	33.29	64.95	10.15	13.30	24.25	42.10	25.65

Table 5

Suggested Activities and Assignments for Follow Up

- You may call the name of a town and have the students see who can first locate it on the map. (It is hoped that the students will find the index and use it to determine the map coordinates of the town.)
- Compute mileage between two given towns. In the activity both airline and road mileage may be computed. (Converting measured airline distance in inches to miles involves ratios and use of the scale-of-miles.)
- Given an origin and a destination, your students may then:
  1. Determine the shortest road route. Is this always the best route?
  2. Compute the distance.
  3. If given a miles per gallon constant and the price of gasoline, the fuel cost can be computed.
  4. After discussing driving conditions along the selected route, your students might wish to compare their estimates for the travel time required to make this trip.
- Show a travel film

Uniform Motion and Average Velocity

When we speak of average velocity, we refer to the constant speed necessary to cover a given distance in a given time. Some texts call this speed the uniform speed, or refer to problems involving average velocity as uniform motion problems. You may be doing your students a genuine favor by assisting them in seeing the significance of average velocity. Inasmuch as most trips from one point to another generally originate and terminate at a speed of zero (a fact greatly appreciated by embarking and disembarking passengers), it shouldn't be too difficult to see that some time or other in between the points the velocity must exceed the average rate of speed -- by how much or for how long depends on several variable factors.

Some rate problems are quite interesting. Here are a couple you may care to present to the class or to a better student:

1. Mr. Slo left his home at 7:00 a.m. traveling at the rate of 45 mph. At 10:00 a.m. his neighbor, Mr. Fast, started after him on the same highway at the rate of 60 mph. How long did it take Mr. Fast to overtake Mr. Slo? (Answer: 9 hours)
2. Mr. Jones travels from Town A to Town B at an average rate of 30 mph. If he wishes to return to Town A, can you tell him at what rate he must return in order to average 60 mph for the round trip? Explain. (Hint: 90 mph ain't the solution.) (Answer: Impossible to average 60 mph for round trip. In going one way at 30 mph he has used all the time available to go and return in order to average 60 mph.)

The road map reading topic can be married to trip planning in a fairly comprehensive student activity by having the students (or team of students) plan a long trip.

You may encourage the students to consider such projects as

- . Corresponding with the travel service of a major oil distributor for routing suggestions
- . Including plans for side trips to points of interest
- . Giving consideration to food, lodging, clothing
- . Estimating the total cost of such a trip
- . Planning a timetable
- . Corresponding with Chambers of Commerce in towns on the route (or high school consumer math classes)
- . Getting the car ready

This activity lends itself well to class projects such as

- . Bulletin board displays of costs of such a trip
- . Displays of scenic points of interest
- . HOW TO PLAN A TRIP bulletin board
- . A display showing the advantages and disadvantages of making a similar trip by rail, plane or bus. Include a cost comparison.
- . The display of a homemade emergency kit for a car (matches, bandages, a dime for telephone call, needle and thread, etc. The National Safety Council has some ideas on this type of project.)

ADDITIONAL PROJECTS AND ACTIVITIES

- . Invite an insurance agent to the class. (Ask HIM those questions you couldn't answer!)
- . Invite an insurance adjustor to visit the class to explain how claims are settled.
- . From a daily newspaper distributed in your community, keep a tally of the number of automobile accidents and the ages of people involved for a 10-day period. Graph the results. Does the survey (limited though it may be) give you ideas for some conclusions concerning age and accidents?
- . Prepare a bulletin board featuring several automobile insurance policies to show features of each including coverage and cost.
- . Keep a record of automobile expenses over a two-week period. (This could develop into a local economy run.)
- . Invite a mover to the class to explain the ups and downs of moving. Have questions for him.

. Invite a postmaster to visit the class to explain some of the postal regulations. Have some questions.

. Investigate cost of $50 versus $100 deductible collision insurance. Which is the better? Why?

. 10/20, 100/200 liability. (Compare costs.)

. Invite an attorney to discuss legal obligations.

. Invite a patrolman to discuss Breathalyzer, Vascar, radar.

. Travelers Book of Street and Highway Accident Data has many good ideas for bulletin boards.

. Theoretically buy a car.

. Visit a traffic court.

. Compare the insurance point system with those assigned by the traffic courts.

. Visit a car inspection station.

RELATED PROBLEMS

The following are suggested as typical problems related to this unit. Additional examples may be found in the source books listed in resources. Of course you may wish to make your own. (Good!)

Purchasing a Car:

Mr. Able bought a station wagon with a basic price of $2,415.15. He made a down payment of one-third of this amount. The following charges were added to the basic price: transportation - $32; Federal excise tax - $192; State sales tax - $80.17; accessories - $202.51. Determine: the purchase price, unpaid balance, and the amount of each monthly payment if the car is financed for 18 months at 6%. (Total cost - $2921.83; unpaid balance - $2116.78; 17 payments - $128.18; 1 payment - $128.23.)

Trading Cars:

You have a four year old car and you now have the new car bug. One dealer offers you $495 in trade on a three year old car priced at $1375. A second dealer offers you $375 on a similar car priced at $1255. Which is the better buy and by how much? (Answer: Equal offer)

Mr. Phillip Atmeals has a one year old car and wishes to trade it for a new one. Trader Sam offers him $1625 in trade on a new car priced at $2292.50 Honest Joe offers him $1750 on the same new car priced at $2495.95. Which dealer offers the better trade and by how much? (Answer: Sam, by $78.45.)

Mary Naive was told by Honest T. Pays, the used car dealer, that he has just the car for her. It was a 1970 Speedmobile with a 427 cu. in. engine, 4 in the floor, fully equipped, which has been owned by a little old lady from Shady Grove who only drove it shopping and to church on Sunday. Mary told him she would purchase the car providing he replaced the racing slicks with white wall tires.

a) If Mary drove from Hicksville to Swinging Junction, a distance of 200 miles in 2 and 1/2 hours, what was here average speed? (Answer: 80 mph)

b) On the trip she used 25 gallons of Soo Preem gasoline and one quart of Greasy State oil. What were her operating expenses if her gasoline costs 39.9¢ per gallon and the oil is 77¢ per quart? (Answer: $10.75)

c) How many miles per gallon did her car get on the trip? (Answer: 8)

d) Mary also received two traffic citations - one for doing 70 in a 60 mph speed zone and the other for passing a Redhound Bus in a no passing zone. If she was fined $37.50 for each offense, what was the total cost of the trip? (Answer: $85.75)

e) How will the cost of Mary's liability insurance be affected as a result of the traffic violations? (Answer: increase of 20%, see Tables 3 and 4)

Depreciation

Mr. Baker bought a new car for $3500. He used that car for eight years and then sold it for $275. How much did it cost him to own the car? What was the average yearly depreciation? (Answer - Cost: $3225.00; average yearly depreciation: $403.125)

Shipping:

Moe B. Dick sends an 85 lb. express shipment of clothing valued at $575 from Cleveland to San Francisco and insures it for full value. The express company insures the shipment up to $50 in value without charge, but it charges an insurance fee of 23¢ for each additional $100 of value or fraction thereof. What is the total insurance charge on the shipment? (Answer - $1.38)

Travel:

A train leaves Raleigh at 3:00 p.m. daily and arrives at New York at 11:15 p.m. the same day. The cost of a coach ticket on this train is $15.15. A bus leaves Raleigh at 12:30 p.m. daily and arrives at New York 12:20 a.m. the following day. The bus ticket costs $13.00. (a) How much time is saved by taking the train? (Answer - 3 hours, 35 minutes); (b) By what percent, to the nearest whole percent, is the cost by bus less than the train fare? (Answer - 14%)

Insurance:

Tom Thomas was responsible for an accident in which two persons were injured. They sued and the court awarded them $16,000 and $8,000 respectively. If Tom's insurance policy provided for a 10 and 20 bodily injury coverage, how much did the company pay the injured parties? How much did Tom have to pay? (Answer: company - $18,000; Tom - $6,000)

During a strike at his plant, Mr. M. Ployer's car was overturned. Repairing the damage to the car amounted to $346.50. Mr. Ployer's policy provided for $100 deductible collision insurance; however, it did not include comprehensive coverage. How much did the insurance company pay for the damage? (Answer: nothing)

Don B. Silly carried $50 deductible collision insurance on his car. He didn't stop one day where he should have. Damages to his car were $285. How much did the insurance company pay? How much did Don have to pay? (Answer: $235 (company); $50 (Don))

U.S. Drivers Involved in Fatal Accidents (1966)
(by age)

Under 18	3,300
18 - 24	17,400
25 - 64	39,600
64 and over	4,700

1. How many drivers were involved in fatal accidents? (Answer: 65,000)

2. (a) How many drivers under 25 were involved? (Answer: 20,700)

   (b) Approximately how many drivers under 25 were involved? (Answer: *21,000)

3. The "under 25" group accounted for what percent of the total? (Answer: 31.9)

4. One of the reasons that the insurance rate for young drivers is quite high may be that this group is involved in more accidents than the size of this group would suggest. If the accident rate were proportional to the number in a given age group, we would expect the "under 25" group (which constitutes about 20% of the drivers) to be involved in how many accidents? (Answer: about 13,000)

5. The younger drivers exceed their "share" by about what percent? (Answer: 60%)

(The Travelers Book of Street and Highway Data, from which the above table was taken, has an abundance of data which lends itself to individual graphing projects and/or bulletin boards. See Bibliography.)

Insurance:

Mr. N. A. Rush lives on a farm, with his teenage son who also drives, near Raleigh, North Carolina. He wishes to buy an automobile liability policy for $10,000/$20,000 bodily injury and $5,000 property damage limit. (a) What would be the cost of the policy if both are classified as safe drivers? (b) What would be the difference in cost should he decide to change the policy to $50,000/$100,000? (c) Suppose he has recently been charged with passing a stopped school bus - what would be the cost on the first policy? (Answer: (a) $81.40, (b) $36.63, (c) $121.60)

---

*Approximation

It is important for the student to improve his ability to approximate numbers. Estimates can be helpful when the consumer is making quick decisions. Remember, though, that the students are guessing and any reasonable estimate should be allowed.

Suggested Reading Assignments:

(Sample selection to show how useful the Reader's Guide to Periodical Literature can be. There are other listings.)

AIRLINES

"Amazing Future for Air Travel," U.S. NEWS AND WORLD REPORT 65:92-94, September 23, 1968.

Doty L. "Rate Per Mile Fare Sparks New Interest," AVIATION WEEK 89:27, December 16, 1968.

"Good Jobs in the Airlines," CHANGING TIMES 20:21-23, June, 1966.

"How Your Family Can Enjoy Air Travel More," BETTER HOMES AND GARDENS 45:30, February, 1967.

"Jet Age Bargain: Youth Fare Passengers," TIME 87:69-70, April 22, 1966.

"Latest on Plans for Jet Airbuses," U.S. NEWS 64:14, May 6, 1968.

"Lower Fares - Round Trip Fares for Groups," TIME 88:90, December 2, 1966.

"Trends Emerge in Latest Fare Proposals," AVIATION WEEK 89:27, December 16, 1968.

"Unfare? Youth Program Loophole Uncovered," NEWSWEEK 67:68+, April 25, 1966.

AUTOMOBILES AND AUTOMOBILE INSURANCE

"Auto Insurance: Big Blowup Ahead," CONSUMER REPORTS 31:398-402, December, 1966.

"Auto Insurance: A Ready Target," NEWSWEEK 70:54-56, August 21, 1967.

Down, M.E. "How To Bargain with a Car Dealer, excerpts from 'How to Save Money When You Buy and Drive Your Car'", POPULAR MECHANICS 130:76-81, November, 1968.

Gregg. "Don't Let an Insurance Error Spoil Your Trip," BETTER HOMES AND GARDENS 46:36, August, 1968.

"Higher Prices Coming for 1968 Cars," U.S. NEWS AND WORLD REPORT 63:12, September 11, 1967.

Irwin, T. "A's to Q's about Auto Insurance," POPULAR SCIENCE 189:72-74+, July, 1966.

Lindberg, P. "Car Insurance: Is There Any Way But Up?" BETTER HOMES AND GARDENS 45:7-8, September, 1967.

Moynihan, D.P. "An New Auto Insurance Policy," NEW YORK TIMES MAGAZINE, August 27, 1967, pp. 26-27+.

Norbye, J.P. and J. Dunne, "Best Car for Your Purse and Purpose," POPULAR SCIENCE 193:110-131, October, 1968.

"Notes on Car Insurance," SENIOR SCHOLASTIC 88:40, April 22, 1966.

O'Brien, R. "How to Save Money Buying a Car," READER'S DIGEST 91:69-72, September, 1967.

"Patterns for the 70's," TIME 91:82, April 26, 1968.

Ribicoff, A. "Car Stealing Made Simple," POPULAR MECHANICS 126:57-59+, July, 1966.

Shafer, R.G. "Confessions of a Car Salesman," POPULAR MECHANICS 126:59-61+, September, 1966.

Spiegel, M. "Used Cars: Wheeling and Dealing," SENIOR SCHOLASTIC 92:37-40, April 25, 1968.

Wenner, D. N. "How to Drive the Turnpikes and Stay Out of Trouble," POPULAR SCIENCE 192:66+, May, 1968.

"What the Law Means to the Consumer," CONSUMER REPORTS 32:192-194, April, 1967.

RAILROADS

"Just and Reasonable, ICC Grants Railways Increase in Freight Rates," TIME 90: 68-69, August 11, 1967.

"Rent Your Own Freight Train," BUSINESS WORLD 104+, October 26, 1968.

TRUCKING

"Elegant Pickups: Your Next Family Car?" POPULAR SCIENCE 191:54-57, August, 1967.

SHIPS

Waugh, A. "Atlantic by Sea," NATIONAL REVIEW 20:462, May 7, 1968.

MISCELLANEOUS

Brown, G.S., Hill, G. "Farewell to Jimmy Clark," SPORTS ILLUSTRATED 28:63-65, April 22, 1968.

Lesure, T.B. "Another Way to Europe," TRAVEL 129:50-51, April, 1968.

"Travel with Small Children can be a Pleasure," SUNSET 140:52, May, 1968.

"Ways to Save on Travel Fares," GOOD HOUSEKEEPING 166:235, April, 1968.

"Westward Ho," NEWSWEEK 71:68, April 29, 1968.

RESOURCES

Distributed by the Independent Insurance Agents organization. See any agent in your home town who belongs to this group.	Your Safe Driver Insurance Plan - explains point system used to determine the cost of automobile insurance policies in North Carolina. (free leaflet)
	Vascar - description of the Vascar device used to measure highway speed. (free leaflet)
	Driving Fitness - tips on health factors that may influence driving ability. (free leaflet)
Director of Educational Division Insurance Information Institute 110 William Street New York, New York 10038	Automobile Insurance - explanation of basic coverage. (leaflet, free in classroom quantities)
	How Do You Rate? - explains how premium rates are determined for automobile insurance. (leaflet, free in classroom quantities)
	Automobile Insurance - color cartoon with recording, 15 min. One copy sent to each school free of charge and for permanent use when requested by audiovisual director or other administrator. (free filmstrip)
	A Family Guide to Property and Liability Insurance - explains in simple terms what everyone should know about insurance for the home and car. (booklet, free in classroom quantities)
	Bulletin Board Chart on Automobile Insurance - (free chart)
J.G. O'Brien The Travelers Insurance Company Hartford, Connecticut 06115	The Travelers Book of Street and Highway Accident Data - published annually. (booklet, free in classroom quantities)
Public Relations Staff Room 1-101 General Motors Corporation Detroit, Michigan 48202	Mathematics at Work in General Motors - set of instructional aids showing industrial use of mathematics with suggested classroom use. (free booklet)
	Automobile Stopping Distances (22' x 34') (free chart)

American Trucking Association, Inc. 1616 P Street, N.W. Washington, D.C. 20036	Brief Facts about the Trucking Industry - American Trucking, Economic Giant - (booklet, free in classroom quantities) American Trucking - (free booklet) History of Land Transportation - (free chart) Trucking photographs for schools - (free photographs) Trucking - Past and Present - (free booklet)
Automobile Manufacturers Association 1619 Massachusetts Avenue Washington, D.C. 20036	1969 Automobile Facts and Figures - gives statistics concerning the manufacture, sale and use of automobiles. Has statistics on State and Federal automobile taxes and automobile credit. (free booklet) 1969 Motor Truck Facts - gives statistics on the manufacture, sale and use of trucks. (free booklet)
North Carolina Motor Carriers Association, Inc. State Headquarters Trucking Industry Building Raleigh, North Carolina	Materials related to the trucking industry in your section of the State.
Maritime Administration Office of Public Information 441 G Street, N.W. Washington, D.C. 20036	Principal Trade Routes of the United States - (free maps)
FILMS:	
Modern Talking Pictures Services, Inc. 503 North College Street Charlotte, North Carolina 28202	Autos, Autos, Everywhere #3010 (30 min., color) This film is a reprint from the 21st Century Television program featuring Walter Cronkite. The film shows some research projects the automobile companies are considering for the cars of the future. A good change of pace film. Daytona Assignment #2964 (25 min., color) Shows performance trials on acceleration, economy and braking. Should interest the boys.

The Strongest Link #2510
(26 1/2 min., color)
The importance of the trucking industry as a link in our nation's transportation system and the wide variety of uses for trucks are presented. Prepared by General Motors.

Road in the Sky #2058
(15 min., color)
Story of jet airplane travel, principally in the South. Prepared by Delta Airlines.

Plane Talk
(25 min., color)
Covers all aspects of airline communications from the time reservations are confirmed until passengers arrive at destination. Illustrates wide use of computers by the air travel industry.

Association Films, Inc.
2227 Faulkner Road, N.E.
Atlanta, Georgia 30324

Man from A.U.N.T.I.E. #S-860
(20 min., color)
Cartoon - describes origin and basic principles of insurance. Includes information about the way automobile insurance rates are developed. Produced by Insurance Information Institute.

Jam Handy Organization
Film Distributor Department
2821 East Grand Boulevard
Detroit, Michigan 48211

How to Buy a Used Car
(15 min., color)
Demonstrates how to proceed in buying a used car. It describes and explains the "look" test, checking under the hood, "dry-run" test and road test.

Santa Fe Film Bureau
80 East Jackson Boulevard
Chicago, Illinois 60604

Wheels A'Rolling
(28 min.)
This film tells the story of transportation from the time of the ox cart and the pony express through the development of the railroads to the diesel locomotive and luxury train of today. The film includes Indian forays and traditional scenes from the life of President Lincoln and Civil War days.

American Trucking Association, Inc.
1616 P Street, N.W.
Washington, D.C. 20036

Champions of the Highway
(26 min.)
This film tells the trucking industry's story - how various types of trucks serve our economy, and the truck's role in national defense. The second half of the film is built around safety and driver skills.

PROBABILITY AND STATISTICS

"Hey, this insurance table says I'll die when I'm 70!"

"Mrs. Rachel, I won't pass college math. My SAT score was 270!"

If your students are making statements like these, imagine (if you dare) how they are interpreting the current number jargon of business and government. Our first objective is to help the students understand some of the elementary ideas of probability and statistics that are being used in consumer materials. We suggest that (1) you concentrate on the basic vocabulary and (2) you use an experimental approach to help the student grasp the fundamentals of probability.

You may wish to begin the year's work with this unit. It is a prestige item for the slower student. It offers excellent opportunities for the laboratory approach to mathematical discovery. Experimental mathematics may catch the interest of those reluctant students whose previous encounters with this subject have been painful experiences.

The ideas contained in this unit will prove useful throughout the year. It is almost impossible to comprehend the basic concepts of insurance without some understanding of probability and statistics. Advertising claims encountered in every unit will receive more careful scrutiny from the students if they have learned to question such statements as "nine out of ten--," "the average number of--," "three to one against--," and "a 30% probability of--." And the student should be able to judge the validity of data included in news and magazine articles.

A. Objectives

1. The student can make mathematical predictions based on the theory of probability.
2. The student can draw valid conclusions from statistical data.
3. The student can determine whether or not a set of data is sufficiently broad to support a given statistical inference.
4. The student can identify a random sampling as opposed to a biased sampling.
5. The student has an understanding of statistical terms.
6. The student can perform experiments to test the validity of a prediction.
7. The student can read and interpret graphs.
8. The student observes scales in interpreting graphic representations of data.

9. The student is skeptical of graphs in which points are plotted only over large intervals.

10. The student realizes that he is able to handle some prestigious mathematics.

B. Suggested Topics for Study

1. Descriptive statistics
    a. The use of statistics
        1) Collecting data
        2) Analyzing data
        3) Opinionnaires
    b. Descriptions of data
        1) Mean
        2) Median
        3) Mode
        4) Range
        5) Frequency distribution
    c. Percent and percentile
    d. Selection of data
        1) Samples
            a) Biased
            b) Reliable
        2) Comparable
        3) Relevant
2. Everyday probability
    a. Interpreting data
    b. Games of chance
    c. Combinations and permutations
    d. Construction of tables and graphs from experimental data

C. Mathematical Concepts

1. Sets
2. Rational numbers (fractions, decimals)
3. Ratios and proportions
4. Percentages
5. Factorials
6. Averages: mean, median and mode

PROBABILITY AND STATISTICS: The Mathematics of Uncertainty

Unfortunately, there is a wide-spread belief that mathematics concerns itself only with problems that have exact answers. The fact is that one of the more significant applications of mathematics deals with uncertainty wherein it becomes a guide to the educated guess. This mathematics of uncertainty is called probability and the mathematics of uncertain measure is called statistics.

Like all mathematics, that which deals with the uncertain can become, if pursued to sufficient depth, quite involved and complex. This possibility does not imply that one must be a professional mathematician to understand and to employ certain basic concepts of probability and statistics any more than one must be a trained physician to understand and to employ certain basic concepts of physiology.

All consumers need to be familiar with elementary probability and certain statistical terms. A working, practical familiarity is within the ability of almost everyone. Elementary expositions appear in most general mathematics texts. Chapter 14 of the Wilcox-Yarnelle text, Mathematics: A Modern Approach, Addison-Wesley, 1964, contains an easy-to-read, easy-to-understand and easy-to-teach section on these topics. Haag-Dudley's Introduction To Secondary Mathematics, Volume 1, D. C. Heath and Company, 1964, has a simple introduction to probability in Chapter 1. The Institute of Life Insurance student booklet, Sets, Probability and Statistics, Chapters 1-4, may be helpful with this particular topic. (This booklet is cited among the resources on page 16.)

PROBABILITY

Definition: The mathematical probability of an event occurring is the ratio of the number of ways that it can occur to the total number of outcomes. The total number of outcomes is the number of ways the event can occur plus the number of ways that it cannot occur.

If s = number of ways of success
f = number of ways of failure

Then (the probability) $P = \frac{s}{s + f}$

Example: What is the probability of drawing (without looking) from a bag containing 1 green marble and 3 red marbles:

- a) a green marble?
- b) a red marble?
- c) a marble?
- d) a banana?
- e) a red marble or a green marble?

Solution:

a) Clearly the number of ways to draw green is 1.
The total possible outcomes (green plus not green) is 4.

Then the probability of green is P (green) = $\frac{1}{4}$ ("one out of four")

b) The number of ways to get red is 3.
The total outcomes, again, is 4.

So P (red) = $\frac{3}{4}$.

c) The number of ways to get a marble is 4.
The total outcomes is 4.

P (marble) = $\frac{4}{4}$ = 1.

d) The number of ways to draw a banana is 0.
The total outcomes is still 4.

P (banana) = $\frac{0}{4}$ = 0.

Note: Example C shows that if an event cannot fail, the probability of its occurrence is 1.

Example D shows that if an event cannot succeed, the probability of its occurrence is 0.

Examples A and B show that if an event may or may not occur (success uncertain), then the probability of its occurrence is a number between 0 and 1.

e) The number of ways to get a green or a red is 4.
The total outcomes is still 4; therefore,

P (red or green) = P (a marble) = $\frac{4}{4}$ = 1.

If we add a yellow marble to the bag, so that the bag contains 1 green, 3 red, and 1 yellow, we can solve a,b,c,d and e as follows:

a) P (green)	Ways to get green Total outcomes	1 5	P (green) = $\frac{1}{5}$
b) P (red)	Ways to get red Total outcomes	3 5	P (red) = $\frac{3}{5}$

c) P (a marble)	Ways to get a marble	5	P (a marble) = $\frac{5}{5}$ = 1.
	Total outcomes	5	
d) P (a banana)	Ways to get a banana	0	P (a banana) = $\frac{0}{5}$ = 0.
	Total outcomes	5	
e) P (r or g)	Ways to get red or green	4	P (r or g) = $\frac{4}{5}$
	Total outcomes	5	

Counting:

Simple "number of ways" can be determined by counting 1,2,3, etc. Larger samples can be counted by more sophisticated means by using the principle of number of ways:

If one thing can be done in M ways and a second thing done in N ways, the total number of ways the two things can be done is M x N.

Example: Sue has 3 skirts and 4 sweaters. In how many ways may she select combinations of 1 skirt and 1 sweater?

Solution: Select skirt 3 ways, sweater 4 ways; number of ways = 3 x 4 = 12.

Example: A certain car comes in 3 body styles, 5 colors and 3 engine options. How many models are available?

Solution: 3 x 5 x 3 = 45 models.

A MATHEMATICAL DIVERSION: Factorials!!!

The following suggestions relate to factorials, probability, and the general multiplication property.

In how many different ways can five students (Al, Sue, Ed, Liz, and Bob) in your class place themselves in a line? After receiving some estimates from the class, a volunteer might illustrate how five objects can be lined up. There are five choices for the first position, and only four for the second position which yields 5 x 4 or 20 different ways to fill the first two positions. For each of these 20 ways, any one of the three remaining can be put in the third position, thus giving 5 x 4 x 3 or 60 ways to fill the first three places. By continuing this reasoning we find that 5 students can line up in 5 x 4 x 3 x 2 x 1 or 120 ways. This can be expressed as 5! (read as "five factorial") and is the mathematical shorthand for the product of all the counting numbers less than or equal to 5.

In the previous example we saw that there were 5! or 120 ways the five students could line up. How many of these ways would include Al as first in line? (Answer: 4! = 24) How many would have Al first and Bob second? (Answer: 3! = 6)

What is the probability that Al will be first if the students are lined up by chance? (Answer: $\frac{1}{5}$) ...that Al will be first and Bob second? (Answer: $\frac{1}{20}$)

If in buying a certain model car there are 7 colors, 3 body types, and 4 colors of upholstery to choose from, how many choices are possible? (Answer: 84)

The school cafeteria offered a choice of 3 drinks, 4 salads, 3 vegetables, 2 meats and 2 desserts. If one item is selected from each category, how many different meals are possible? (Answer: 144)

Write each of the following digits on a separate card: 2, 3, 5, 6, 8 and 9. By rearranging these cards, how many different six-digit numbers can be formed? (Answer: 6! = 720) What is the probability that a number randomly formed will be less than 500,000? (Answer: $\frac{1}{3}$)

SAMPLE MATH LAB

The Die is Cast

Objectives

1. To promote an intuitive understanding of how ordered pairs are used as a means to distinguish between different possible outcomes.
2. To discover how many outcomes are possible with two dice and how they may be easily listed.
3. To check the validity of the dice.

Background

The potential of this lab is best realized by encouraging the students, in pairs, to arrive at conclusions independent of what the others in the class are doing.

Material

One unmarked cube and two lab sheets for each student.

Procedure

Distribute one cube to each student. Ask the pairs of students to mark the dice by different coloring or numerals so that the two dice in each pair are distinguishable from each other. The surfaces should be numbered, one through six. Although the commercial die is marked so that the sum of opposite faces is always seven, that need not be done here. One might ask why dice are marked in that way.

Ask each pair of students to determine how many different outcomes are possible with two dice. They will begin tossing the dice, or listing results perhaps randomly. If someone has 2, 3 - ask if that means 2 with the first and 3 with the second die; or 2 with the second and 3 with the first die. This will indicate to the student the importance of the two different types of markings on the pair of dice and suggest the value of using an ordered pair of numerals for recording the results.

When a pair of students realizes there are 36 different possible outcomes, then they should show you a pattern for listing all of them such as: (1,1); (1,2); etc. You are now ready to give them each the two lab sheets to begin completing. After filling in the missing ordered pairs in the table on Lab Sheet # 1, they should each toss the dice 108 times while the other records results. From this data they should be able to draw some sound mathematical conclusions.

SAMPLE MATH LAB

Name: ______________________

Summary Sheet for Sample Math Lab

1. Mark your dice in such a way as to be able to distinguish one from the other.
2. How many possible outcomes are there with two dice? _______ Explain:

3. Complete the following table to show all these possible outcomes.

Table of All Possible Outcomes

Second Die

		1	2	3	4	5	6	
First Die	1	.....	.....	.....	.....	.....	(1,6)	Possible Outcomes Number of Results
	2	.....	.....	.....	.....	.....	.....	Possible Outcomes Number of Results
	3	.....	.....	.....	.....	.....	.....	Possible Outcomes Number of Results
	4	.....	.....	.....	.....	.....	.....	Possible Outcomes Number of Results
	5	.....	.....	.....	.....	.....	.....	Possible Outcomes Number of Results
	6	(6,1)	.....	.....	.....	.....	.....	Possible Outcomes Number of Results

4. Record the results of the experiment from Lab Sheet # 2 in the spaces provided in this table. Were your dice fair? _____ Explain:

5. If we had recorded the results differently, so that a 4 on the first die and a 3 on the second die were considered the same as a 3 on the first and a 4 on the second, how many different outcomes would there be using the two dice?
6. How many different outcomes are possible with 3 cubes?
7. What convenient way can you invent to record the outcomes from tossing 3 cubes?

Lab Sheet # 2 SAMPLE MATH LAB Name: ____________

Data Sheet for Tossing Two Cubes

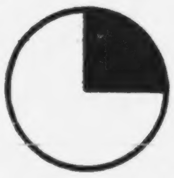
	Outcomes			Outcomes			Outcomes			Outcomes			Outcomes			Outcomes	
Trial #	1st Die	2nd Die	Trial #	1st Die	2nd Die	Trial #	1st Die	2nd Die	Trial #	1st Die	2nd Die	Trial #	1st Die	2nd Die	Trial #	1st Die	2nd Die
1			19			37			55			73			91		
2			20			38			56			74			92		
3			21			39			57			75			93		
4			22			40			58			76			94		
5			23			41			59			77			95		
6			24			42			60			78			96		
7			25			43			61			79			97		
8			26			44			62			80			98		
9			27			45			63			81			99		
10			28			46			64			82			100		
11			29			47			65			83			101		
12			30			48			66			84			102		
13			31			49			67			85			103		
14			32			50			68			86			104		
15			33			51			69			87			105		
16			34			52			70			88			106		
17			35			53			71			89			107		
18			36			54			72			90			108		

RELATED PROBLEMS

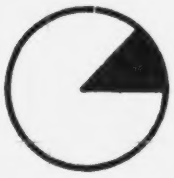
What is the chance of turning up two tails if we toss two coins? (Answer: $\frac{1}{4}$)

Are the following graphs an indication that Country C spends more money for sugar than Country D? What other facts might be helpful? (Answer: A heading for the graph)

C



D



If a two-headed coin is tossed, what is the probability of getting heads? (Answer: $\frac{1}{1}$ or 1) What is the chance of getting tails? (Answer: $\frac{0}{1}$ or 0)

The Alpha-Beta food market gives away a color television each week. If 1000 chances are given out during the week and you have three of these, what is the probability that you will win? Will not win? Express your answers as decimals and percents. (Answers: $\frac{3}{1000}$; $\frac{997}{1000}$; .003 ; .997 ; .3% ; 99.7%)

Discuss the validity of the following statement: Brown and white cows produce 20 percent more milk than brown cows. Therefore, brown and white cows are the better cows.

Suppose a family includes three children. What are the chances that the children will be all boys? Assume that each child is equally likely to be a boy or a girl. (Answer: $\frac{1}{8}$)

Statistics:

Random Sampling

A tire manufacturer guarantees a certain tire for 30,000 miles of normal use. Obviously, he cannot check his claim by running each tire for 30,000 miles before he sells it. How can he be sure that he will not lose money on his guarantee?

This question (or a similar one) could be used as a starting point for a discussion of sampling techniques. The students can also learn a great deal about the collection and interpretation of data by conducting one or more polls during the year. Special efforts should be made to help them distinguish between random sampling and biased sampling.

Have the class poll the students for their opinions regarding a cigarette tax. One half of the class could question cigarette smokers only; the other half should plan and conduct as fair and impartial a survey as possible. Have the two groups compare results. Show that the results of the second survey could be used to support any opinion by using selected portions of the figures obtained.

Have the students take a few deliberately biased samples - Example: Make a survey of the favorite sport of the football team; find out how many teachers think study hall is their best period of the day, etc.

(There is an excellent illustrated section on sampling in Chapter 12 of Dilley and Rucker's Mathematics, Modern Concepts and Skills, Book 3, published by D.C. Heath and Company, 1969.)

Measures of Central Tendency

The students need to be familiar with the three M's of statistics -- mean, median, and mode. The mean or, to use its common name, the average is not always a reliable indication of what is happening in the middle. For example, if five graduates of a high school have annual salaries of $1200, $3400, $3800, $3800 and $12,000, respectively, the average or mean would be ($1200 + $3400 + $3800 + $3800 + $12,000) ÷ 5 = $4,840. This is a higher salary than four of the five workers are earning. It may be the average of the salaries, but it is not the salary of the fabled "average" man of the group.

The median ($3800) is a better measure for this situation. It is the number found in the middle when the numbers are arranged in order from the smallest to the largest.

The third M, the mode, gives another aspect of the set of numbers. The mode is the item which occurs the greatest number of times in the set. In the example the mode is $3800, since $3800 appears twice and the other salary amounts occur only once.

Question: Name an industry which would find the mode of a set of numbers more useful than the median or mean.

Possible answer: Clothing industry, shoe manufacturers

Range

Another useful measure for a set of numbers is the range. The range is the difference between the largest and smallest number in the set. In the example, the range is ($12,000 - $1200) = $10,800.

Suggested Activities

- If there is a manufacturing company in your area, invite the quality control engineer to speak to your class about his work.
- List each student's name and height and have the students arrange this information in order beginning with the tallest and determine the mean (arithmetic average), median, and mode. The same activity could be done using each student's weight. If you wish to include such factors as hair and eye color, which average would be appropriate, the mean, median or mode? After completing these exercises, determine Mr. or Miss Average for your class.
- Ask each student to write on a piece of paper the amount of money he has with him (no name on paper). After these have been collected, arrange the amounts in order beginning with the largest. Find the mean (arithmetic average), median and mode.
- Divide your class into committees and let them conduct a survey as to what type car the students in your school (or their parents) own. Then determine the mode.

- Have a student place a specific number of marbles in a bag -- say 15; 7 white, 5 red, 3 blue. Without disclosing the contents, pass the bag around, have each student draw out a marble, identify the color and replace it. Tabulate on the board the number of times each color is drawn. Do this several times and then have the class determine the probability of drawing each color. Compare this with the actual probabilities as based on the contents of the bag.

- Suggested topics that may be used to collect data:

  a) scores of athletic events
  b) school absences or tardiness
  c) school grades
  d) utility bills
  e) shoe sizes, clothing sizes, ring sizes
  f) read the class a list of twenty common items each of which is sold under several brand names. Ask the students to write the names of their favorite brands. Compare results. Example:

     1. toothpaste
     2. soft drinks
     3. cereal
     4. bread
     5. milk
     6. aspirin

- Visit a statistical laboratory or interview a statistician.

- Have a committee conduct a survey for a week to determine how much time each class member spends watching television. Graph the results. (An interesting comparison might result from a similar survey that determines the amount of time each student devotes to studying each week.)

- The monthly normal temperature (Farenheit) for Your Town, North Carolina, is: 43, 45, 52, 61, 70, 76, 78, 77, 72, 63, 52, 45. Construct a bar graph to illustrate this data.

Additional Related Problems

- Suppose these were the scores on a recent mathematics test: 88, 90, 93, 86, 74, 67, 84, 68, 91, 77, 82, 86, 75, 82, 71, 93, 82, 76. Find the mean, median, mode, and range. (Answer: mean = 81.4; median = 32; mode = 82; range = 26.)

- The Car Care Center in Carefree, North Carolina, paid the following wages to its employees:

	Wages Per Person
1 owner	$22,000
2 managers	7,500
6 mechanics	6,800
3 lubemen	3,600
7 driveway attendants	3,300
1 car wash man	3,000

What is the mean? (Answer: $5,735)

What is the median? (Answer: $3,600)

What is the mode? (Answer: $3,300)

What is the range? (Answer: $19,000)

HEART-BURN HOTEL

Coffee Shop
Al K. Seltzer, Manager

MENU
Luncheon

Choice of
Appetizer, salad, one meat, one vegetable, dessert and beverage

Appetizers:
tomato juice
grapefruit half
orange juice

Meats:
ham steak
1/2 fried chicken (or well done, if you prefer)
hamburger steak
chicken livers
brave livers

Desserts:
lemon pie
lemon cake
lemon pudding

Salads:
fruit salad
tossed salad
lettuce

Vegetables:
french fries
stewed tomatoes
green beans
carrots

Beverages:
milk
tea
coffee
lemonade

Problem to Accompany Menu:

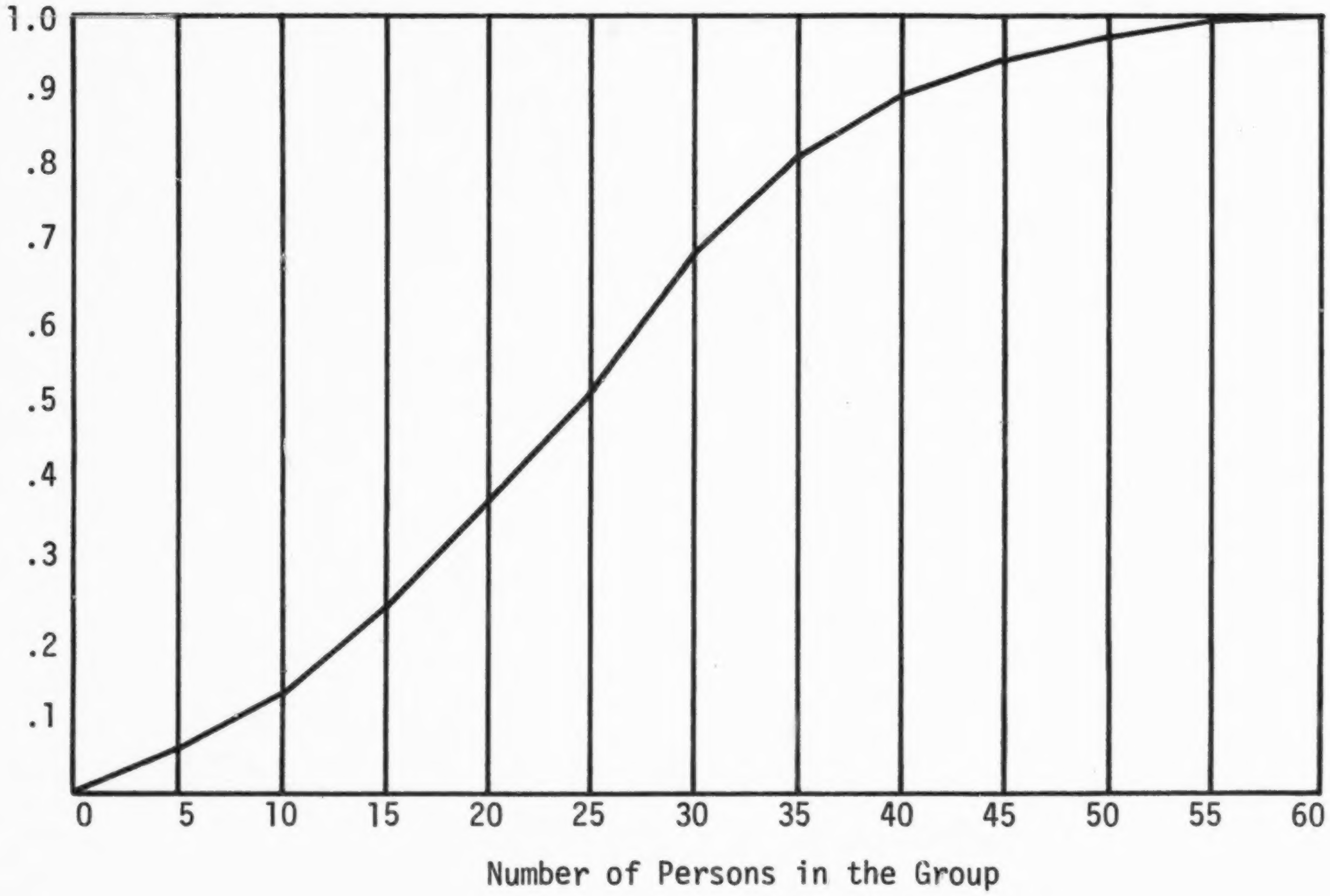
You go into the coffee shop and place your order. If Mr. Seltzer has just one meal ready to serve (appetizer, salad, meat, vegetable, dessert and beverage), what is the probability that it will fit your order?

Answer: $\frac{1}{3 \times 3 \times 5 \times 4 \times 3 \times 4} = \frac{1}{2160}$

Note: Before computing you may wish to have each student write an order for the meal. It may be interesting to see how many of them have duplicate orders. Or you could select one student as Mr. Seltzer and see how many matched his order. Do you really expect to have many duplicates?

- List the month and day of the month on which each student in your class was born. Do any two students share the same birthday? What is the probability of this happening? Secure a similar list from another classroom. Altogether, you should have the birthdate of between 50 and 60 different people. In how many instances, if any, does a pair of students from these classes share a birthdate? Compare your findings with the predictions of the graph.

PROBABILITY OF A SHARED BIRTHDAY



What are the chances of a shared birthdate among 35 people? among 20 people? among 100 people? (Answers: .8; approximately .35; approximately 1)

- You might wish to have the students check with the county tax collector to see if he has records on the make of car registered in your county. These results, if they are available, could lead to the development of some very interesting problems.

  e.g. In Happy Valley, where the "Funny Farm" is located, there are 100 cars described on the tax roll as follows:

Distinguishing Characteristics	Number
Horizontal stripes	100
Vertical stripes	120
Checkered squares	60
Polka dots	25
Stars	15
Rainbow effect	10
Flower designs	70

- If you were standing on the corner of Walk and Don't Walk in Happy Valley,
  - a) What would be the probability that the car that ran over you has flower designs on it if you were hit crossing the street against the light? (Answer: $\frac{7}{10}$)
  - b) How old was the driver who hit you? (Answer: Not enough information given)
- For three weeks during the football season, keep records of the yards won or lost, total score and number of downs scored by the high school team, a college team and a professional team. Then find the mean, median, mode and range for each of these. (The yardage record will open the way for a discussion of negative integers.)
- Collect data on the frequency of letters in a paragraph or the frequency of digits in telephone numbers. Predict the frequency of all paragraphs and check the results.
- Prepare a bulletin board showing how statistics can be used for deception. The book, "How to Lie with Statistics," is a good source for ideas.

Suggested Reading Assignments:

Gardner, M. "It's More Probable Than You Think," READER'S DIGEST 91:107-110, November, 1967.

"Crooked Shake: Lake Tahoe Hotel Casino Closed," TIME 89:62, October 27, 1967.

"Facts about Give-Away Games," GOOD HOUSEKEEPING 165:202-203, November, 1967.

"Fun and Games; Cheating at Beverly Hills Friars Club," NEWSWEEK 70:44-45, September 18, 1967.

Brooks, T. R. "Numbers, The Game That Only the Mobsters Win," READER'S DIGEST 91: 79-82, September, 1967.

"Science and Snares of Statistics," Time Essay, TIME 90:29, September 8, 1967.

Golomski, W. A. "Are You Selling Quality Short?" NATION'S BUSINESS 55:72-74, December, 1967.

"Look Inside the Polls - Who is Asked About What?" U. S. NEWS AND WORLD REPORT 65:44-46, September 30, 1968.

Mood, A. M. "Machete in the Paper Jungle; Statistical Sampling in the Office of Education," AMERICAN EDUCATION 3:5, October, 1967.

"Mood of Country as Poll Takers Find It; Findings of Gallup Polls," U. S. NEWS AND WORLD REPORT 63:91-92, December 11, 1967.

Pekkanen, J. "People Behind the Percentages; Pollsters and the Polled," LIFE 65: 52-60, July 19, 1968.

Spitznagel, E. L. "Experimental Approach in the Teaching of Probability," MATHEMATICS TEACHER 61:565-568, September, 1968.

"Trial by Mathematics; Defects in 1965 Decision Using Law of Statistical Probability," TIME 91:41, April 26, 1968.

Witcover, J. "Can We Believe the Pollsters," REPORTER 38: 14-16, May, 16, 1968.

"Yes, No, Don't Want to Know," SCIENTIFIC AMERICAN 218:46, January, 1968.

RESOURCES

Educational Division Institute of Life Insurance 277 Park Avenue New York, New York 10017	Sets, Probability and Statistics: The Mathematics of Life Insurance - instructional booklet. (free in classroom quantities) Use order blank in Insurance unit.
Education Division Insurance Information Institute 110 William Street New York, New York 10038	Chances Are ... An Introduction to Probability - programmed instructional booklet. (free in classroom quantities)
National Consumer Finance Association 1000 Sixteenth Street, N.W. Washington, D.C. 20036	Finance Facts Yearbook - included in the kit, ONE WEEK TEACHING UNIT ON CONSUMER FINANCE. (free booklet)
Educational Services Automobile Manufacturers Association 320 New Center Building Detroit, Michigan 48202	Facts for Study - booklet. (free in classroom quantities)
National Council of Teachers of Mathematics 1201 Sixteenth Street, N.W. Washington, D.C. 20036	Arrangements and Selections (50¢)

FILMS:

Modern Talking Pictures Services, Inc. 503 North College Street Charlotte, North Carolina 28202	Life Insurance - What It Means and How It Works #1654 (13 min., color) Illustrates the use of statistics in establishing premium rates.
	Before It's Too Late #4075 (13 min., color) Narrated by Dick Van Dyke; dialogue contains statistical terms; concerns use of seat belts, shows experiment performed by University engineers

Association Films, Inc.
2227 Faulkner Road, N.E.
Atlanta, Georgia 30324

Man From A.U.N.T.I.E. #S-860
(13 1/2 min., color)
Illustrates use of statistics to establish insurance premium rates.

Life Insurance - What It Means and How It Works #S-791
(13 min., color)
Illustrates the use of statistics in establishing premium rates.

BOOKS:

Adler, Henry L. and Raessler, E. B., INTRODUCTION TO PROBABILITY AND STATISTICS. W. H. Freeman and Company, 1962.

Dolciani, M. P., Beckenback, E., Donnelly, A., Jurgensen, R., and Wooten, W., MODERN INTRODUCTORY ANALYSIS. Atlanta: Houghton-Mifflin Company, 1968.

Fehr, H. F., Bunt, L., and Grossman, G., AN INTRODUCTION TO SETS AND HYPOTHESES TESTING, Boston: D. C. Heath and Company, 1964.

Herrick, M., Zartman, J., and Conrow, T., USING STATISTICS AND GRAPHS. Houghton-Mifflin, 1967.

Huff, Darrell, HOW TO LIE WITH STATISTICS. New York: W. W. Norton and Company, Inc., 1954.

Johnson, D. A. and Glenn, W., EXPLORING MATHEMATICS ON YOUR OWN, THE WORLD OF STATISTICS. Webster Division, McGraw-Hill, Inc., 1963.

Johnson, Donovan A., EXPLORING MATHEMATICS ON YOUR OWN, PROBABILITY AND CHANCE. Webster Division, McGraw-Hill, Inc., 1963.

Mosteller, F., Rourke, R., and Thomas, G. B., PROBABILITY: A FIRST COURSE. Reading, Massachusetts: Addison-Wesley, 1961.

Niven, Iven, MATHEMATICS OF CHOICE, HOW TO COUNT WITHOUT COUNTING. New York: Random House and the L. W. Singer Company, 1965.

Wilcox, Marie S. and Yarnelle, John E., MATHEMATICS: A MODERN APPROACH, Book I., Reading, Massachusetts: Addison-Wesley, 1967.

SWINDLES AND GYPS

"Things that appear too good to be true probably are."

Unknown

If you are teaching Consumer Mathematics for the first time, you will probably be flabbergasted by the number of your students who have already lost money as a result of some dubious practices. The sad truth is that North Carolinians of all ages, all levels of education, and all walks of life are being fleeced by unscrupulous individuals. Your students and their families are contributing their share of the yearly United States total of one billion dollars spent for health quackery and $500 million spent for home improvement schemes, just to mention two areas of consumer interest.

We need to make the student aware of some of the more common swindles and hoaxes. They need to be familiar with some of the danger signs in business transactions so they can be alerted to investigate further when these signs appear.

They should learn where they can find honest advice and helpful information for their consumer decisions. We should emphasize, however, that the majority of businessmen are honest.

Our purpose is to have the student discover (1) what services he can expect from an ethical businessman; (2) how to select those merchants with whom he will be doing business.

A. Objectives

1. The student is aware that there are several schemes practiced to defraud the public.
2. The student is aware that many agencies have been created for consumer protection.
3. The student can make quick mental estimates of the costs of "deals."
4. The student is aware that free enterprise is based on consumer trust and that the majority of businesses are ethical and dependable.
5. The student avoids interpreting law without the aid of persons trained in law.
6. The student uses mathematical skepticism in reading and evaluating advertisements.

B. Suggested Topics for Study

1. Advertising

- a. Bait advertising
    - 1) Bogus prizes
    - 2) Simulated checks
- b. Deceptive pricing
    - 1) List prices
    - 2) Discounts
    - 3) Preticketing
    - 4) Trade-in allowances
    - 5) Comparative pricing
    - 6) Wholesale pricing

2. Deceptive packaging
3. Fraudulent special sales
    - a. Auctions
    - b. Fire
    - c. Sample or floor merchandise
    - d. Loss of lease
    - e. Forced bankruptcy
    - f. Going out of business
4. Catalog and mail order merchandising schemes
5. Guarantees and warranties
6. Debt consolidation rackets
7. Business opportunity schemes
    - a. Partnership
    - b. Franchise
    - c. Earn at home
8. Home study schools (also fraudulent colleges)
9. Factory Gate schemes (free home trial)

10. Referral schemes
    a. Chain letters
    b. Rebates for customer referrals
11. Home improvement swindles
    a. Official inspections of furnaces, etc.
    b. Exterior improvements - siding, paint, roof, etc.
    c. Storm windows
    d. Paving driveways
    e. Nursery stock and landscaping
12. Vacation cruise schemes
13. Games of chance - dishonest fair and carnival attractions
14. Dishonest charity collections
15. Worthless stocks and bonds - the "Boiler Room" operator
16. Pigeon Drop Hoax (common in North Carolina)

C. Mathematical Concepts
1. Fundamental operations with whole numbers, rational numbers, decimal fractions
2. Computing interest
3. Using percent
4. Estimating answers
5. Collecting data
6. Interpreting data
7. Reading and understanding tables

INTRODUCING THE UNIT

Two or more weeks spent studying man's cruelty to man can be depressing, to say the least. Most teachers prefer to include topics in other units. For example, referral schemes are used by fly-by-night home improvement operators and also by some door-to-door appliance salesmen. This selling technique could be included as a topic in the Housing or the Money Management units. At the end of the year, you may wish to develop topics which were not included in your earlier work. Note: (1) Do not make, nor allow your students to make, unsupported statements regarding local situations; (2) Refrain from discussing the legality or illegality of a given situation: No person should ever apply or interpret any law without the aid of a trained lawyer who knows the facts, because the facts may change the application of the law.

SUMMARY OF COMMON MISCONCEPTIONS OF CONSUMERS WITH RESPECT TO CREDIT OBLIGATIONS

Prepared by the Legal Aid
Society of New York

1. That the law prevents a seller from overcharging for goods.

2. That hardship to the buyer in carrying out a contract will relieve him of the legal obligation.

3. That if the seller takes back the goods, the buyer is automatically relieved of the need to pay for them.

4. That purchases can be returned if there is a change of mind.

5. That deposits must be returned if there is a change of mind.

6. That if there is a defect in the goods, the buyer does not have to pay.

7. That if there are co-signers, the seller is obligated to collect first from the purchases and user of the goods.

8. That the payments will be to the seller and not to a third party and that the buyer therefore has a form of pressure to exert against the seller of unsatisfactory merchandise.

9. That what the salesman says has equal weight with what the contract states.

10. That buyers can hold up payments while adjustments or refunds are being made.

Suggested Activities:

. During the year, have students collect newspaper articles about swindles and schemes, particularly those in North Carolina. File these in a notebook to be used for resource materials and discussion topics when appropriate.

. Have the class study examples of unfair game devices such as marked cards, loaded dice, weighted wheels of chance. Bring samples if you can locate them. Determine the probabilities of throwing certain numbers with the unfair dice. Compare these results with the probabilities of throwing a certain number with fair dice.

. As the class studies each unit in this course, have students use the Reader's Guide to Periodical Literature to locate articles concerning fraudulent practices that are national problems.

. A discussion of packaging in the food industry will reveal hidden price increases, deceptive sizes, and interesting price comparisons. These topics should emerge from direct experiences. All three topics should permit easy access to some mathematical exercises involving ratio and proportion.

. Collect some earn-at-home advertisements from the newspapers and magazines. Discuss possible pitfalls to be investigated before investing in these.

. Have a guidance counselor discuss home study schemes in which former students invested (also shady training schools - fashion, airline stewardess, private technical schools, etc.). Large numbers of North Carolinians lose money to these each year.

. Ask a legislator to discuss North Carolina laws recently enacted to protect citizens against fraudulent practices.

. Ask your students to tell about salesmen who have recently appeared at their doors. Discuss (a) what they were selling and (b) how satisfactory the product was.

. Make a bulletin board displaying advertisements from your daily paper and "junk" mailing. Study them and look for examples of misleading statements and pictures.

. Ask a local doctor or health authority to discuss health quackery - particularly any current local problems.

. Invite your local postmaster to discuss mail frauds, emphasizing local conditions.

. Ask visiting speakers to comment on any common malpractices in their area of business, emphasizing local problems.

. Students can usually alert each other to fraudulent schemes currently being promoted in your area. Invite them to contribute personal experiences of instances when they have lost money. Have you lost money in one? Share your experiences with them.

. Many schemes, such as bait-and-switch and the flim-flam will be excellent subjects for role-playing.

. Plan a buzz session around the topic, "Can a consumer commit a fraud?"

RELATED PROBLEMS

Lolly Pop received the following letter from DeKoor C. Deal Stereo Company.

"We take great pleasure in announcing that YOUR LICENSE NUMBER has been selected this week's LUCKY NUMBER in our Lucky Tag Bonanza.

You will receive at no additional cost a four (4) speed automatic Hi-Fi Stereo Console with built-in AM and FM radio. You will have a choice of several sets.

As you can see, this type of advertising is quite expensive; therefore, to help offset some of the costs of freight and advertising, when you pick out your stereo, you must agree to purchase the equivalent of one stereo record weekly for twelve months and for your convenience payable monthly."

Sincerely,

DeKoor C. Deal

When Lolly visited the store, she was told that the cash price for each record was $4.95. She could select the option of paying for the year's supply of records in a single payment in advance or in twelve monthly payments of $28.13.

a) If lolly accepts her "prize" how much would it cost her to pay cash for the records? (Answer: $257.40)

b) If Lolly decides to make monthly payments, how much must she pay for this convenience? (Answer: $80.16)

c) What phrase of the letter should have put Lolly on guard? (Answer: "...no additional cost...")

d) What gimmicks are employed to "mislead" Lolly? (Answer: YOUR LICENSE NUMBER.. LUCKY NUMBER)

e) What phrase does the advertiser use which he hopes Lolly will misread? (Answer: "...at no (additional) cost"; "one...record weekly for 12 months)

f) Upon careful reading, is this deal fraudulent? (Answer: No)

Izzy Wise bought two shirts marked "reduced - two for $8.00." When he came out of the store, he met his friend, Willie B. Sharpe. Izzy showed Willie the shirts and Willie exclaimed: "Oh, I wish I had waited! Just last week I paid $11.85 for three shirts just like yours!" How much did Izzy save? (Answer: Nothing -- Willie saved 15¢ by not waiting.)

In a community of 100 families, how many families could recover the cost of a vacuum cleaner sold under a referral scheme, if (1) the vacuum cleaner costs $120, (2) a family is to get a $10 discount for every referral family that buys a vacuum cleaner, (3) all families in the town buy a vacuum cleaner, (4) no family refers more than 12 others, (5) no family gives out of town referrals? (Answer: Maximum - 8)

Variation: If the same vacuum cleaner retails for $80 in a local store, how many families could avoid a loss if each family made five referrals and only four referrals purchased a cleaner? (Answer: 19 families)

Don Reed Goode, a prospective high school graduate, together with his parents, entered into an agreement with Greater Yukon Polytech (Good Old GYP) whereby for only $700 Don was to receive a home study course.

Don later discovered that his classmate Wanda Ware had signed up for the same course and had agreed to pay only $300. Furthermore, Mr. Goode learned that GYP had sold his $700 note to a local financing concern for $200. If it can be proved that the Goodes were deceived into agreeing to pay more than the course was worth, to what extent may GYP be liable under North Carolina General Statue 75-1.1? (Call the county attorney's office for information.) Should the courts rule deception has occurred and should the courts rule $200 to be the value of the course, the Goodes may be entitled to three times their damages (700 - 200 = 500) or $1500.

Suggested Reading Assignments:

(Many others available in the Reader's Guide to Periodical Literature.)

"Gyps and Swindles and Schemes," CHANGING TIMES 19:29-32, June, 1965.

"Losers on the Road: Indictment of Tax Officials for Running Traffic-Fine Racket in Greenwood Village," TIME 85:46, April 23, 1965.

"Robbing the Aged: Finding of Subcommittee of Senate Special Committee on Aging," AMERICA 112:224, February 24, 1965.

"Our Daughter was a Victim of the World's Cruelest Hoax," GOOD HOUSEKEEPING 161:81+, November, 1965.

"Facts on Quacks," TODAY'S HEALTH 46:57+, February, 1968.

Smith, R.L., "New Traffic in Cures for Cancer," SATURDAY EVENING POST 241:62-64, February 10, 1968.

"Biggest Swindle: Phony Export Deals in Germany," NEWSWEEK 71:79+, March 25, 1968.

Raab, S. and Raab, H., "How to Spot a Fraud," SEVENTEEN 27:166-167, April, 1968.

"AMA, FDA Rap Diet-Pill Fad," TODAY'S HEALTH 46:82, April, 1968.

"The Four Horsemen of Quackery: Fear, Gullibility, Deceit and Deadliness," TODAY'S HEALTH, January, 1965.

"The Face Burners," TODAY'S HEALTH, June, 1966.

"Doctor Abrams - Dean of Medicine Quacks," TODAY'S HEALTH, June, 1966.

Pearl, Jack, "The Top Ten Consumer Gyps in the USA," AMERICAN LEGION MAGAZINE, April, 1966.

"You Can't Get It Wholesale," CONSUMER BULLETIN, March, 1964.

"The Quality of TV Repair Services," CONSUMER REPORTS, February, 1967.

"Watch Out for the Fire Alarm Gyps," CONSUMER BULLETIN 50:18, May, 1967.

"Consumer Frauds: These Schemes Can Cost You Money," GOOD HOUSEKEEPING 164:208, April, 1967.

"Beware the Terrible Williamsons; Confidence Tricksters," READERS DIGEST 89, September, 1966.

"Common Thieves; Swindlers Collect Illegal Subsidies; EEC Scandal," NEWSWEEK 69: 78, February 20, 1967.

Hall, R. "Mail Fraud in the Public Schools," SCHOOL AND COMMUNITY 55:31, December, 1968.

Monograph, W.J., "Quacks and the Dead," PTA MAGAZINE 63:24-6, October, 1968.

"Beef Baiters Meet the Press," CONSUMER REPORTS 33:306-308, June, 1968.

"Cinderella Meets the Press; Gag Consumer Protection Agencies," CONSUMER REPORTS 33:308-309, June, 1968.

"Chain Referrals: Those Schemes to Earn Appliances," GOOD HOUSEKEEPING 166:170, February, 1968.

"Charge! Gang Defrauds Diners Club," TIME 90:80, November 24, 1967.

"Congress Votes for the Consumer," BUSINESS WEEK, May 18, 1968, pp. 31-32.

"Cost of Being a Missing Heir," GOOD HOUSEKEEPING 167:153, August, 1968.

"Don't Get Hooked by These Mail Frauds," CHANGING TIMES 22:37-38, July, 1968.

"Leaving the Door Open: Proposed Bill to Allow Householder a Day in Which to Cancel a Contract Made with a Visiting Salesman," NEWSWEEK 17:87, March 18, 1968.

Lindberg, P. "300,000 Consumers Speak Out, Consumer Questionnaires Analyzed," BETTER HOMES AND GARDENS 46:52-55, June, 1968.

"Plight of the Consumer," PTA MAGAZINE 62:28-29, March, 1968.

"Post Office Protects Consumers Against Fraud," CONSUMER BULLETIN 50:19-20, November, 1967.

Raab, S. and Raab, H. "How to Spot a Fraud," SEVENTEEN 27:166-167+, April, 1968.

Shattuck, G.E., "Shysters, Moochers and Gyp Artists are Exploiting Our Students," NEA JOURNAL 56:66-67, December, 1967.

Schultz, N. "How To Outfox the Home Improvement Swindler," POPULAR MECHANICS 130: 80-83+, July, 1968.

Warton, D. "Five Consumer Frauds and How To Avoid Them," READERS DIGEST 91:69-72, December, 1967.

RESOURCES

Federal Trade Commission
Sixth Street and Pennsylvania
Avenue, N.W.
Washington, D.C. 20580

Guide Against Bait Advertising

Guide Against Deceptive Advertising of Guarantees

Guide Against Deceptive Pricing

Guide Against Debt Collection Deception

FTC Consumer Bulletin 1 - Pitfalls to Watch for in Mail Order Insurance Policies

FTC Consumer Bulletin 2 - Unordered Merchandise - Shippers Obligations and Consumer's Rights

Here is Your Federal Trade Commission (contains a good summary of common deceptive practices)

Look For That Label

Investigate - Stop - Look - Says The FTC

Federal Trade Commission - Protector of Consumers and Fair Competition

Fight Back - The Ungentle Art of Self Defense

FTC Reports on District of Columbia Consumer Protection Program

(Free booklets)

Consumer Union of United States, Inc.
256 Washington Street
Mount Vernon, New York 10550

The Buying Guide Issue of Consumer Reports - published annually in December. $1.95.

Postal Inspector-in-Charge
U. S. Post Office
Atlanta, Georgia 30302

Mail Fraud Pl. #19 (booklet, free in classroom quantities)

The Law Vs. Lotteries Pl. #15 (booklet, free in classroom quantities)

Better Business Bureau
Washington, D.C.

Facts You Should Know About Jewelry

Earn at Home Schemes

	Wolves Who Wait at the Factory Gate	
	Don't Fall for These Gimmicks	
	The Straight Pitch	
	27 Questions for Home Owners	
	Horrors in Storm Windows	
	Home Improvement - No. 5	
	Termite Control - No. 3	
	Public Service of Private Business in the Public Interest	
	Rugs and Carpeting	
	(Free booklets)	
American Medical Association Department of Investigation 535 North Dearborn Street Chicago, Illinois 60610	Did You Know That...?	(10¢)
	Mechanical Quackery	(15¢)
	Health Quackery Devices	(15¢)
	Facts on Quacks	(15¢)
	Health Quackery	(20¢)
	The Merchants of Menace	(10¢)
	Health Quackery - Arthritis	(15¢)
	Health Quackery - Cancer	(15¢)
1965 Publication No. 47 American Federation of Labor and Congress of Industrial Organizations 815 16th Street, N.W. Washington, D.C.	Consumer, Beware!	(15¢)
Mr. Jean Benoy Consumer Protection Division Room # 673 Revenue Building Raleigh, North Carolina 27602	The Consumer Protection Division of the North Carolina Attorney General's Office has plans to produce a bulletin entitled Consumer's Newsletter. To be placed on the mailing list, send your name and address.	

Charlotte Observer
Charlotte, North Carolina

Let the Buyer Beware - Series of newspaper articles concerning selling practices in the Charlotte area.

BOOKS:

Beam, M., IT'S A RACKET. New York: McFadden-Bartell Corporation (paperback, 50¢)

Caploritz, David, THE POOR PAY MORE. New York: The Free Press, 1963.

Cook, J., REMEDIES AND RACKETS. New York: W.W. Norton and Company, 1958.

Crowther, S. and Winehouse, I., HIGHWAY ROBBERY. New York: Stein and Day, 1966.

Dichter, Ernest, HANDBOOK OF CONSUMER MOTIVATIONS. New York: McGraw-Hill, 1964.

Editors of Consumer Reports, MEDICINE SHOW. New York: Simon and Shuster, 1961.

Callen, R.T., WIVES' LEGAL RIGHTS. Dell Publishing Company, 1965 (Dell Purse Book).

Margolius, Sidney., THE CONSUMERS GUIDE TO BETTER BUYING. Pocket Books, 1966, 50¢.

Packard, Vance, HIDDEN PERSUADERS. New York: David McKay Company, 1957.

Packard, Vance, THE WASTE MAKERS. New York: David McKay Company, 1960.

Smith, Ralph L., BARGAIN HUCKSTERS: HEALTH HUCKSTERS. New York: Thomas Crowell Company

Trump, Fred, BUYER BEWARE! Nasheville, Tennessee: Abingdon, 1962.

Weir, Walter, TRUTH IN ADVERTISING AND OTHER HERESIES. New York: McGraw-Hill, 1963.

FILMS:

Information Service
County of Los Angeles
500 West Temple Street
Los Angeles, California 90012

On Guard (27 min.)
Designed to give information about fraudulent schemes used by criminals in defrauding the public. This film is available for showing without charge, but has a lengthy waiting list. Order as soon as possible.

INSURANCE

Mention insurance to a group of high school students and they'll begin discussing the high cost of auto insurance. Mention insurance to a group of adults and the home owners will talk about paying off mortgages and property protection; the couple with young children will discuss education costs and feeding a family if the breadwinner dies; the businessman will tell you about his liability needs. The dictionary lists many meanings of the word insurance. It is not surprising that different people assign different priorities when they consider insurance.

There are some generalities that may help the student increase his understanding of this complex subject. The protection feature of insurance does not protect one from a possible loss or disaster, but does provide protection against financial losses resulting from such an event. Most students think of protection as a feature of insurance. Not as many are aware of the investment potentials of insurance. There are many kinds of contracts insuring compensation for many kinds of losses and liabilities. In general, the primary concept of all forms of insurance is the pooling of resources by many people in order to share costs of financial losses of members of the group.

Some pretty high-powered mathematics is involved in the theory of insurance - so much so that insurance companies employ some of the world's best paid mathematicians (actuaries) as advisors. However, some of the basic concepts of dealing with risks are well within the scope of the students' abilities. The study of these concepts will add prestige to the course - and possibly, add to the student's understanding of insurance.

A. Objectives

1. The student can define insurance in terms of pooled resources and shared risks.

2. The student can explain that an insurance policy is a contract and can identify the general responsibilities of the parties to the contract.

3. The student distinguishes between insurance sold by companies and insurance-like programs administered by governmental agencies.

4. The student can categorize various insurance programs on the basis of insurance of person or property.

5. The student can explain the purposes of various insurance programs.

6. The student shows an understanding of the definitions of terms peculiar to insurance.

7. The student can identify the factors which are used in determining premium rates for a policy.

8. The student validates the assumption that an insurance program should be uniquely tailored to fit an individual's current life status.

9. The student can use rate tables to estimate the cost of an insurance policy.

10. The student can describe the basic benefits provided through the Social Security program.

11. The student enumerates his responsibilities under FICA.

12. The student can compute the amount of an employee's FICA tax contribution using the current rate established by Congress.

B. Suggested Topics of Study

1. Buying insurance
    a. Selecting the company
        1) Mutual or stock
        2) Assets and management
        3) State controls
    b. Selecting an agent
    c. Analyzing a policy
        1) Risk covered
        2) Time covered
        3) Amounts or limits
        4) Premiums
        5) Warranties
        6) Contestability
        7) Reinstatement
        8) Premium waivers
        9) Settlement options
        10) Loans
        11) Dividends
        12) Exclusions

        - 13) Beneficiary
        - 14) Rebate
2. Life insurance
    - a. Straight (whole, ordinary)
    - b. Limited
    - c. Endowment
    - d. Term
    - e. Combination policies
    - f. Group
    - g. Industrial
    - h. Annuities
    - i. National Service Life Insurance (GI insurance)
3. Health and accident insurance
    - a. Hospital
    - b. Surgical
    - c. Medical
    - d. Major medical
    - e. Income protection
4. Property insurance
    - a. Fire and extended coverage
    - b. Casualty
    - c. Title and mortgage
    - d. Ocean and inland marine
5. General liability insurance
6. Workmen's compensation and unemployment compensation
7. Social Security (Federal Insurance Contributions Act
    - a. Disability
    - b. Retirement

    - c. Survivor's
    - d. Lump sum death payment
    - e. Medicare
        - 1) Hospital
        - 2) Voluntary medical

C. Mathematical Concepts

- 1. Interpreting graphs and charts
- 2. Utilizing mathematical tables
- 3. Ratio and proportion
- 4. Elementary probability and statistics
- 5. Percentage
- 6. Operations with rational numbers and decimal fractions

INTRODUCING THE UNIT

The unit should develop naturally from informal discussions if someone furnishes a leading question or so. Here are some suggested opening questions and activities. Remember that the opening questions are designed to draw out the students' present ideas, not necessarily the correct answer. How about this very first one for originality?

. What is this thing called insurance?

. What does insurance insure?

. How does insurance work?

. What can you insure?

. What are some unusual things that have been insured?

. How does an insurance company determine premiums?

. How does insurance relate to savings?

. What is an insurance policy?

. How do the various types of insurance relate to peace of mind?

. Have several policies available (for different kinds of insurance), compare them, contrast them.

. Start an insurance glossary.

- How does an insurance company make money?
- How does an insurance company get started?
- What kinds of insurance does a student need? Why?
- Where would you register a complaint against an insurance company?
- How is the public protected against "fly by night" insurance companies in North Carolina?
- How do North Carolina insurance laws differ from other states?
- Ask your insurance agent to discuss the selling practice called "twisting."
- What should you look for (and look out for) when you purchase insurance by mail?

LIFE INSURANCE

Some students' reactions to life insurance tend to a single question. "What good will it do me?" There will probably be students in your class who fall into one or more of the following categories: (1) those who have benefited by life insurance, (2) those who could have benefited by life insurance, (3) those who have benefited as survivors under the social security act, (4) those who know of people in one of the preceding categories. Furthermore, some of your students may be insured at present. This type of familiarity - direct or indirect - provides you with a good foundation on which to begin a discussion of the topic.

Leading Questions:

- Should everyone have life insurance?
- Why do people buy life insurance?
- What do you think "terminal expenses" means?
- What does "readjustment expenses" suggest to you?
- Who is protected by life insurance?
- What kinds of life insurance plans are available?
- How do various plans compare? contrast?
- Does Social Security provide a death benefit? To whom do the benefits apply?
- Under what conditions may one person insure another's life?
- Why do corporations sometimes buy large policies on their executives?
- What factors determine the amount of insurance a person should buy?

- When should a person buy life insurance - when he is young and pays lower premiums for a longer time or when he is older and pays higher premiums for a shorter time?
- Can a person buy all the insurance that he wants to?
- When does a policy become incontestable?

AUTOMOBILE INSURANCE

(See Transportation Unit)

HEALTH AND ACCIDENT INSURANCE

In 1968, rising costs for health care accounted for approximately 8% of the increase in the cost of living. For the average citizen, predictions of hospital room costs of $100 a day in the immediate future are enough to make him run, not walk, to the nearest health insurance agent.

Health insurance provides a method for the average earner to pay for large health care bills a little at a time. The wide variation of benefits and costs of plans, however, complicate the problem of selecting adequate coverage with available funds. One way to introduce this subject might be to ask students who are buying health insurance through their places of employment to bring their policies and make a careful study of the benefits they provide. If a student does not have his own policy, he could study the family's policies.

This study, combined with some of the suggested activities, may give the student a model for making future changes in his insurance program.

Activities and Leading Questions

- Does the age of a policyholder affect the cost of the policy? What other factors might affect the cost?
- What type of automobile insurance might be considered health insurance for the policyholder?
- Compare the features of group health insurance programs with individual health insurance policies. What are the advantages and disadvantages of each?
- Many policies contain a "waiting period" clause. How does the clause benefit the company? Does the clause provide any advantages for the policyholder?
- List the risks which might face you during a typical day.
- Most health insurance policies contain a deductible clause. If the policy has a $100 deductible clause, what does this mean?
- Under the major medical policy, what information is requested when filing a claim for drugs?
- Should an individual pay for small medical bills from his budget? Why?

- Contact the local hospital(s) to find the answers to the following questions:
  - When are bills presented?
  - Is a deposit or pre-payment required for a planned admission?
  - What payment methods are accepted?
  - What is the approximate cost of the average patient's care?
  - How long does the average patient stay?
  - What are the services that all patients receive? What are the rates for these services?
  - What are the current room rates? Has the hospital raised them recently? Does it plan to raise them soon?
  - What are some other services and their rates that are received by many patients?
  - What is the average cost of maternity care? For care of a premature infant?

Encourage the class to contribute other questions. Contact a physician or medical secretary to get corresponding data on doctor bills. Use the information obtained to check benefits provided by different insurance policies.

PROPERTY AND GENERAL LIABILITY

Students are not totally ignorant concerning property insurance especially if the property is an automobile. Automobile insurance, collision and liability, is analogous to other forms of property insurance.

Property insurance is an agreement whereby one party (the company) guarantees another (the insured) against financial loss caused by a specified contingency or peril. Property insurance refers to contracts in which the financial loss accrues as a result of a casualty to the insured's property.

Liability insurance provides protection against financial loss to the insured resulting from damage to other persons or property (for which the insured is responsible). The students may be more amenable to a discussion of general liability insurance if they become aware that the law generally requires restitution to anyone who is injured or whose property is damaged as a result of another's negligence.

- What is property?
- What properties can be covered by insurance?
- Why should a homeowner be concerned about liability insurance?
- What are some perils to which a dwelling is subject?
- What are some perils to which you are subjected when you visit a friend?

- What is negligence?

- What is insurable interest?

- What losses have you suffered that could have been insured? Was the risk of loss sufficiently great to merit insuring against loss?

- Would you buy a policy that guaranteed replacement of every lost pencil? If the premium were $1.00 a year? If the premium were $10.00 a year?

- What special kinds of insurance would you buy if you were a farmer?

- How could we determine the replacement value of the furnishings in this classroom? What is the value of the furnishings?

- What is Lloyd's of London?

SOCIAL INSURANCE

Many of the parents of your students are not old enough to remember when the first social insurance laws were enacted. It is hardly surprising that most of the students are not aware of the conditions that led to this legislation and therefore do not have a clear understanding of the objectives of the laws.

The protections provided by Social Security and other laws do have some features of insurance. They also have some basic differences. In any event, for most wage earners, the benefits provided by the Federal Insurance Contributions Act, Workman's Compensation and Unemployment Compensation will provide the basis for most other insurance decisions.

The benefits and costs of the programs have changed several times since their inception, and plans call for more changes in the future. The best sources of information for the student will probably be the local Social Security Office, the daily newspaper and periodicals. The students should be encouraged to seek help from all of them.

- Why did the federal government enter the insurance business?

- What life insurance features are included in Social Security? How does Social Security differ from private insurance plans?

- Prepare a bulletin board showing benefits available under Social Security and who is eligible to receive them.

- What are the responsibilities of the employee under FICA?

- Review articles from 1965 magazines and newspapers concerning the Medicare amendment to Social Security. Let the students try a little role-playing of different congressmen and debate the amendment.

- Compare the benefits of the hospital and medical provisions of Medicare with those of private insurance programs. Compare the costs of the voluntary medical insurance provision in Medicare with the costs for a comparable policy from a private company.

- Ask a representative from the local Social Security Office to answer questions for the class and discuss the impact of the Social Security Act on the community.

- What is the minimum age for applying for a Social Security account number?

- What provisions are made for disability benefits?

- What is the maximum number of weeks that a person may draw unemployment benefits? Can anyone who loses a job get unemployment benefits? Can teachers get unemployment compensation during the summer?

- If there is a branch office of the North Carolina Vocational Rehabilitation Division in your community, ask a representative to speak to the class. Your school guidance department can give you some assistance here.

- What kind of government services are offered to people with handicaps such as blindness, deafness or mental retardation? Where should a citizen apply for such assistance?

- List jobs in your community that require the worker to join a retirement program. If any plans are available, compare these with retirement programs offered by private insurance companies.

- Try to obtain retirement insurance advertisements from a magazine published in the 1930's or 1940's. Would these be good ads to use today?

ADDITIONAL ACTIVITIES

- Compare the risks of today with the risks of your grandparents. What new risks are there now that did not exist then? What risks did they take which no longer exist?

- Find out from a local insurance agent what are considered to be hazardous occupations. Suppose a person who is a standard risk later transfers to a hazardous occupation. Will he have to report this change to the insurance company?

- If you do not have any health insurance and someone offers to buy you a policy as a gift - either hospital expense, surgical expense, general medical expense, or major medical expense insurance:

  (a) Which of these four policies would you select? Why?

  (b) If you decide that you want additional health insurance protection and you plan to buy an additional policy, what type of policy would you select?

. Prepare reports (written or oral) telling what kind of life insurance you would advise each of the following persons to buy:

(a) The head of a family with three small children

(b) A man leaving the country for two years on a dangerous job

(c) A single person, without dependents, who wishes to build up a nest egg for later use

(d) A person earning a large salary

(e) A person who desires a large amount of permanent insurance at the lowest possible cost

. Find out from relatives or friends what types of group life insurance are offered through their employers and through the organizations to which they belong. List the various kinds of insurance and describe briefly the benefits provided by each. Students who are employed could add their own list.

. Have a group of students find out all they can about government insurance for those in the armed services, how it is financed and whether it may be kept after discharge. If some of the fathers or brothers of students in class still have GI insurance, find out how much is carried, how payments are made, and whether dividends are paid.

. Invite a local insurance agent to speak to your class. Ask him to explain the different types of life insurance policies and various provisions. Perhaps he can give some additional information on GI insurance.

. Have a committee find out about the Workman's Compensation laws in North Carolina.

. Investigate the ways in which a worker may guard against the loss of income as a result of disability, unemployment, old age or death. Since a person is covered by social insurance against the loss of income, why would he want to buy additional protection?

. Appoint a committee to find out if a person can borrow money at the bank at a cheaper rate of interest using his insurance policy as security than he would have to pay if he borrowed on his policy from the insurance company.

. Investigate the relationship between insurance rates and size of damage claims allowed by juries.

. Some travel insurance policies are sold through vending machines in airports. Compare rates of such policies with rates of similar policies offered by insurance agents. Why do some airlines object to this practice?

. Investigate terms and rates for income protection policies.

RELATED PROBLEMS

What will Holme Owner have to pay a year to insure his brick dwelling which cost $20,000 and his household furniture, which is valued at $7450, if both are insured for four-fifths of their value at the rate of 10¢ per $100 per year and 16¢ per $100 per year, respectively? (Answer: $16.00; $9.54)

Jose Kanusy owned a flag factory valued at $75,000. He insured the building for $65,000. A fire completely destroyed the factory. How much should he have received from the insurance company? (Answer: $65,000)

In one area, statistics show that consumers spent $185 billion in a recent year for goods and services. Of this figure $16.8 billion was spent for medical expense.

(a) Approximately what percent of the total amount spent was spent on medical services? (Answer: Approximately 9%)

(b) If this amount on medical services had been distributed among a population of 95 million, estimate each individual's share. (Answer: Approximately $180) What is the approximate share of each family of four persons? (Answer: Approximately $720)

Red Hugh, a dyer at Socket-Dumee Hosiery Mill purchased a $3,000 20-year endowment life insurance policy naming his brother-in-law, Caesar Fortune, as the beneficiary.

(a) If Red dies two years later will the insurance company have to pay anyone? (Answer: Yes, if premiums are paid.) If so, whom? (Answer: Caesar Fortune)

(b) If Red lives to dye for 20 years paying the premiums each year, will he receive any money from the insurance company at that time? (Answer: He may elect to.) If so, how much? (Answer: $3000 maximum)

(c) If Mr. Hugh dies seven years after receiving his endowment, will Caesar receive anything? (Answer: No)

Read this policy:

Getwell-Quick Insurance Company in return for premiums paid by payroll deductions, agrees to pay the following costs for the employees of Poole Table Company:

Hospitalization

1) $18 per day for room, board and general nursing care, up to a maximum of 120 days.

2) Fees for:

   a. Use of operating and treatment rooms
   b. Anesthesia, drugs, laboratory examinations, special dressings, etc., except blood for transfusions.
   c. Special treatments such as radium therapy, physical therapy, etc., up to a $300 maximum

3) Surgical and medical treatments not charged by hospital:

   a. Surgeon's fees according to a table, setting a maximum for each type of surgery
   b. Medical services not requiring surgery when the employee is in the hospital

A. Q. Ball went to the hospital for an operation for which the table of surgeon's fees allowed $240.

His bills were:

28 days room and board	@ $ 19.00	per day
2 pints of whole blood	35.00	per pint
use of operating and treatment rooms	132.00	
X-rays	35.00	
special drugs	33.40	
surgeon's fees and medical care	350.00	

(a) How much did the insurance company pay for Mr. Ball? (Answer: $944.40)

(b) How much did Mr. Ball have to pay? (Answer: $208)

What will it cost to purchase fire insurance for a building whose value is $9000 at the rate of $16.15 per $1000, if you insure for 80% of the building value? (Answer: $116.28)

B. B. Gunn has $6.85 deducted from his pay each month for health and accident insurance premiums. His employer, Hansum Arms Company, pays a matching amount. How much does his insurance cost per year? (Answer: $164.40) What part of the premium is paid by Gunn? (Answer: one half)

Ann Tenor, bookkeeper for Jack Glegg T. V. Service, reported that the company had insured 2500 sets for the past year at $32 each. Repairs to insured sets amounted to $71,634.40. Did the company show a profit? (Answer: yes) If so, how much? (Answer: $8,365.60) If 850 sets were repaired, what was the average repair cost? (Answer: $84.28) What was the average profit made by the company on each set insured? (Answer: $3.25)

Pretend that you are the life insurance rater. Except for occupations, all factors are equal. List the people's names in order of increasing risk in occupations:

Hi Walker ... A high wire performer in a circus
Ledger Page ... A bookkeeper
K. Boom ... A demolition man
Sink Down ... A female deep sea diver
Les N. Major ... A miner
Vera High ... A steeple-jack
Clutch Klutch (double clutch) ... A truck driver
Theresa Crowd ... A singer in a trio
Iona House ... A housewife
O. K. Wright ... Consumer mathematics teacher

To illustrate the theory of insurance - pooling resources and sharing risks - an imaginary problem could be set up within your classroom.

Define the risk-	A textbook having the value of $5.00 could be lost or stolen.
The policyholders-	Everyone in the class.
Determine the expected loss-	Based on last year's experience ___ books will probably be lost amounting to _____.
The costs which the insurance company may have-	Salary for a secretary to type contracts, send notices and collect premiums. Business forms ________.
Determine premium- (Total cost ÷ No. of policyholders)	Total cost of insuring policy ______. (To be paid semi-annually, September and January)

At the end of the first semester, it is found that a bad risk is among the group. Johnny has already lost two books. The book insurance company has collected $12.50 and owes $15.00. What can be done?

(a) Assess policyholders since this is a mutual company?

(b) Cancel Johnny's policy?

(c) Put Johnny on assigned-risk plan?

(d) Introduce point system?

(e) Other possibilities?

Should cost of policy be reduced if the student is issued a book in poor condition?

Should an insurance adjustor be appointed?

How will the company minimize the risk of fraud?

Suggested Reading Assignments:

"Optional Extras They Sell with Life Insurance," CHANGING TIMES 22:43-45, March, 1968.

Gregg, D. L. "When Are You Wise Not to File An Auto Insurance Claim?" BETTER HOMES AND GARDENS 46:40+, March, 1968.

"Collecting More Than the Policy Maximum," TIME 91:53-54, February 23, 1968.

"Heat Is On Insurance; Industry Totals Up Riot Losses," BUSINESS WEEK, Page 34, April 13, 1968.

"Credit Life Insurance, Revolving Style," CONSUMER REPORTS 33:116-117, March, 1968.

Scott, D. J. "Speaking Out; We Doctors Were Wrong About Medicare," SATURDAY EVENING POST 241:12+, February 24, 1968.

"Auto Insurance, The Low Down on Safe Driver Policies," CHANGING TIMES 22:6-9, June, 1968.

"Check the Changes on The Insurance Scene," CHANGING TIMES 22:28-29, August, 1968.

"How Good Is Your Insurance In A Riot?" U. S. NEWS AND WORLD REPORT 64:42, April 22, 1968.

"Insurance That Pays for Drugs," GOOD HOUSEKEEPING 166:172, January, 1968.

Knox, G. M. "How to Deal with Your Biggest Health Costs," BETTER HOMES AND GARDENS 46:44+, September, 1968.

"Ten Most Misunderstood Facts about Health Insurance," BETTER HOMES AND GARDENS 46:39-40, April, 1968.

Lindberg, P. "How Good A Buy is Term Insurance," BETTER HOMES AND GARDENS 46:6+, April, 1968.

"What Are Your Social Security Benefits," BETTER HOMES AND GARDENS 46:8, March, 1968.

Morris, J. A. and Saldino, M. D. "What You Should Know About Health and Accident Insurance," READER'S DIGEST 93:113-116, August, 1968.

"Personal Business; Gearing Your Insurance to Inflation," BUSINESS WEEK, Pages 123-124, May 4, 1968.

"Picking The Beneficiary for Your Life Insurance," CHANGING TIMES 21:11-13, November, 1967.

Stevenson, C. "How Secure is Your Social Security?" READER'S DIGEST 91:75-80, October, 1967.

Watkins, A. M. "What Every Young Couple Should Know About Life Insurance," REDBOOK 130:53-60, February, 1968.

RESOURCES

Director of Educational Division
Insurance Information Institute
110 William Street
New York, New York 10038

An order form is provided for a folder from which the following items were selected. The folder will have an order form to be used for the following materials:

Insurance Facts - selected data of general interest relating to property and liability insurance.

Home Insurance Leaflet - six-page leaflet on the homeowner's policy. (free in classroom quantities)

Bulletin Board Chart on Automobile Insurance - chart of six basic coverages. (one free for each classroom)

Bulletin Board Chart on Home Insurance - chart picturing property covered and perils insured against. (one free for each classroom)

Chances Are - a booklet using the programmed instruction technique to explain the law of large numbers and how it applies to setting property and liability insurance rates. (free in classroom quantities)

Introductory Book - Sample Property and Liability Insurance Policies - six basic policies and forms; 28 pages. (single copy free to teacher)

A Date with Your Future #166 a personal and family finance booklet which includes the development of consumer skills. (free to teachers of home and family living classes)

The Search for Economic Security #173 - a booklet of readings prepared for classes in American history, economics, and problems of democracy. (free to teachers of social studies)

Sets, Probability and Statistics #176 - programmed text-workbook. Covers topics of sets, sample spaces, probability, premium calculation, the uses of life insurance. (free in quantities up to 100. Teacher's Key - single copy)

Life Insurance Fact Book #454 - annual source book which serves as a good reference book for teacher. Contains glossary. (single copy free to teacher)

	Handbook of Life Insurance #901 a concise reference book which explains various phases of the life insurance business. Reference book for teacher. (single copy free to teacher)
	A List of Worthwhile Life and Health Insurance Books #951 a bibliography of materials available from commercial publishers or other sources. (single copy free to teacher)
	Source Book of Health Insurance Data #1213 - annual source booklet of statistics, charts, and graphs on the health insurance business. (single copy free to teacher)
Hartford Accident and Indemnity Company 690 Ashlam Avenue Hartford, Connecticut	General Information Regarding Insurance and Bonds - a booklet which includes non-technical explanation of casualty insurance and surety bonds.
	Glossary - a glossary of appreciations, terms and phrases commonly used in fire and casualty insurance.
North Carolina Industrial Commission P.O. Box 2479 Raleigh, North Carolina 27602 Attention: Mrs. Bell	Bulletin - North Carolina Industrial Commission Information about the North Carolina Workmen's Compensation Act.
Federal Trade Commission Sixth Street and Pennsylvania Avenue, NW Washington, D.C. 20580	Consumer Bulletin No. 1 Pitfalls to Watch for in Mail Order Insurance Policies.
Mailing Room Technical Education Services University of Missouri Columbia, Missouri 65202	Life Insurance - Families Talk It Over - circulars planned to help families understand the principles and concepts of life insurance.
Institute of Life Insurance 277 Park Avenue New York, New York 10017	An order form is provided for a catalog from which the following items were selected. The catalog will have an order form to be used for the following materials:

	Policies for Protection - programmed material in text-workbook form covering the fundamentals of life and health insurance. (free in quantities up to 100)
	It's Up to You #4 - a guide to a career in life and health insurance. (free in quantities up to 25)
	Decade of Decision #123 - describes life and health insurance by means of the case study approach. (single copy free)
	Patterns for Protection - a color cartoon home insurance filmstrip accompanied by a recording. 15 minutes. (one copy will be sent free of charge and for permanent use when requested by audiovisual director or other administrator)
U. S. Department of Health, Education and Welfare Office of Consumer Services Washington, D. C. 20201	Consumer Newsletter - monthly newsletter. To be placed on a mailing list, write to the address given. (free)
District Office of Social Security Administration	Pamphlets, leaflets, wall charts, films and speakers are available from your local office. (free)

FILMS AND FILMSTRIPS:

Association Films, Inc. 2227 Faulkner Road, N.E. Atlanta, Georgia 30324	Man From A.U.N.T.I.E. #S-860 (14 min., color) Cartoon presentation of how the property and liability insurance business serves its policyholders and the economy.
	The Invisible Force #S-859 (20 min., color) Traces the history of property and liability insurance from 1000 B.C. to modern times.
	Life Insurance - What It Means and How It Works #S-791 (13 min., color) Tells how modern life insurance operates.

	After the Fire #S-115 (13 min., color) Defines the duties and responsibilities of the public insurance adjustor. He helps property owners prepare inventories of losses and interpret insurance policies.
Modern Talking Pictures, Inc. 501 North College Street Charlotte, North Carolina 28202	Time and A Place To Grow (28 min., color) A look at the lives of three families who desire a good education for their children. Shows how life and health insurance have a place of importance in their lives - teachers should preview.
Audio-Visual Associates 805 Smith Street Baldwin, Long Island New York 11512	To Serve Human Needs (15 min., color) Filmstrip relates the story of man's attempt to find security for himself and his family.
District Office of Social Security Administration	The Social Security Story (15 min., color) Shows what happens to a person's social security record from the time it is established until application for benefits is made - also explains the variety of benefits paid.
	You and Medicare (27 min., color) Tells about medicare benefits; how people apply for them; how the benefits are paid; and how the program works.
	Medicare (10 min., color) Explains briefly the aspects of the two-part health insurance program, hospital insurance, and medical insurance.

ORDER FORMS

Director of Educational Division
Insurance Information Institute
110 William Street
New York, New York 10038

Please send the folder which lists the available free educational materials for automobile insurance and home insurance to the address below:

Name ________________________ Position ____________________

School ________________________ Address ____________________

City ____________ ____________ State ______________ Zip Code _____

Institute of Life Insurance
277 Park Avenue
New York, New York 10017

Please send the current Catalog of Teaching Aids #113 on life and health insurance and money management to the address below:

Name ________________________ Position ____________________

School ________________________ Address ____________________

City ________________________ State ______________ Zip Code _____

HOUSING

Although the words "house" and "housing" classically call up images of moderately sized, free standing structures meant for living in, they also properly refer to a whole spectrum of habitations. Owing to the geographic as well as social mobility of our society, many of your students will soon be occupants of residences scattered all along that spectrum. From this unit, the students can gain some useful knowledge concerning the problems associated with acquiring a place to live.

There is a need to investigate some of the problems of maintaining the place after it has been selected, and improving the place so that it will satisfy more fully the individual's interpretation of home.

While owning a home may be an aspiration of many students, in general the first housing sought and acquired is rented. In some areas there is an increase in purchases of mobile homes as an initial residence. This unit is structured to suggest "housing" as "a place to live" and to emphasize the term in its sense of "home as the center of the family unit."

A. Objectives

1. The student identifies variations in housing needs as stemming from the number of people in the family, their ages and activities.
2. The student can list the factors to be considered when renting a home.
3. The student identifies the role of income in housing.
    a. He relates instances in which housing is not a reflection of income.
    b. He makes reasonable estimates of the portion of income which should be allocated for housing purposes.
4. The student can distinguish between the purchase price of a home and the cost of owning and maintaining a home.
5. The student can describe various home financing plans.
6. The student can use interest tables to derive the total purchase price of a home under different mortgage plans.
7. The student explains how the cost of a mortgage varies with the number of payments, interest rate, and amount of the loan.
8. The student can make a physical model for an object represented in a scale drawing.

9. The student makes reasonable estimates of the size of objects.
10. The student can distinguish between the dimensions of an appliance and the capacity of an appliance.
11. The student can recall basic geometric formulas and select the proper one for solution of area, perimeter, or volume problems.
12. The student can estimate costs of simple home repairs and renovations.
13. The student can use local rates to determine the approximate cost for utilities.

B. Suggested Topics for Study

1. Renting a home
    a. Advantages
    b. Disadvantages
    c. Selecting a rental unit
        1) Cost
        2) Location
        3) Restrictions
        4) Size and arrangement
        5) Available utilities
        6) Appearance
        7) Extra charges
        8) Extra privileges
        9) Lease
2. Mobile homes
    a. Rental
    b. Buying
        1) Parking space
            a) Availability and cost of utilities
            b) Rental fee
            c) Local codes and regulations

    2) Size and floor plan
    3) Exterior appearance
    4) Furnishings and appliances
    5) Construction
    6) Cost
        a) Interest charges
        b) Towing and installation costs
        c) Depreciation
        d) Insurance
        e) Maintenance

3. Buying a home
    a. Advantages
    b. Disadvantages
    c. Costs
        1) Related to income
        2) Down payment
        3) Interest
        4) Closing
        5) Annual payments for principal and interest
        6) Taxes
        7) Insurance
        8) Maintenance
        9) Depreciation
        10) Initial occupancy
    d. Selection
        1) Type
            a) Apartment
            b) Old home
            c) Ready-built new home
            d) Building a new home
        2) Neighborhood
        3) Community facilities

        - 4) Available utilities
        - 5) Zoning laws
        - 6) Building codes and regulations
        - 7) Title and deed restrictions
        - 8) Taxes, assessments
        - 9) Landscaping
        - 10) Resale value
    - e. Securing legal services
- 4. Home financing
    - a. Loan sources
        - 1) Building and loan associations
        - 2) Mortgage companies
        - 3) Life insurance companies
        - 4) Banks
        - 5) Trust companies
        - 6) Private investors
    - b. Financing methods
        - 1) Cash
        - 2) Straight loan
        - 3) Amortized loan
            - a) Reduction plan
            - b) Regular plan
        - 4) Federal Housing Administration
        - 5) Veterans Administration
        - 6) Farmers Home Administration
        - 7) Second mortgage
    - c. Special mortgage features
        - 1) Partial payments
        - 2) Open-end

3) Prepayment clause

4) Joint owners

5) Package deals

6) Land contract

7) Deed of trust

C. Mathematical Concepts

1. Area, perimeter, volume formulas
2. Conversion of units of measure
3. Scale drawings
4. Reading mathematical tables
5. Operations with rational numbers
6. Using percent
7. Estimation
8. Ratio and proportion

INTRODUCING THE UNIT

The homes from which your students come probably represent a valid cross section of those available in your community. In all likelihood, there will be a considerable range in that cross section where structures, standards of living, and cultural values are concerned.

What factors will you consider when you are faced with finding a place to live?

. Will you rent or buy?

. Is it better to rent or to buy?

. What kinds of homes are available for purchase?

. What kinds of homes are available for rental?

. What are some advantages of living in an older home?

. What are some disadvantages of living in an older home?

. Compare the merits (or inconveniences) of urban living to rural living.

- Why is an industry usually concerned with the availability of houses for rent or sale in an area in which it plans to open a new plant?
- What factors may influence a person to rent rather than to buy?
- In what ways do the locations of residences influence the budget?
- What are some reasons for owning a home?
- What are some risks in owning a home?
- What are some conveniences of renting? Are there any inconveniences?

RENTING A HOME

There are some positive and negative aspects to renting a home. Some people rent by choice, others by chance. To some renting is a way of life; to others it is a means of maintaining a house until conditions favor a purchase.

In recent years there has been a decline in the construction of individual houses for rental purposes; however, the construction of apartments is on the rise (especially where the high rise is considered). More stringent laws setting standards for rental properties have been coming out of legislative hoppers which may have influenced the decline in rental home construction. Too, construction costs for single units is generally higher than for multiple units on a cost-per-unit basis.

Upkeep and maintenance costs of rental properties are usually borne by the landlord. This does not mean that the tenant is relieved of financial responsibility for these items. Since they are legitimate operating expenses, the landlord considers such outlays when setting a rental price that will bring him a fair profit. The tenant, therefore, pays for them in his rent. He is saved the inconvenience of having the repairs or renovations performed. In the same manner the tenant bears the cost of property taxes on the rental property.

The owner has made an investment, and he is going to try to make a profit on it. Since renting is a business venture in which the tenant is the customer, more and more owners are becoming aware of tenants' needs and are trying to give their customers good service. The renter may shop for quarters to find the place that best fits his needs and circumstances.

BUYING A HOME

The purchase of a home is a major investment for most consumers. In fact, it is the largest investment for many people. It is relatively unusual for the average person to pay cash for so large a purchase. The apprehension accompanying the signing of a twenty-year contract increases his concept of the size of the transaction. Small wonder that such an event is frequently considered a momentous occasion.

There are many factors influencing the decision of the prospective house buyer. Build or buy? New or old? Where? How much? Brick or frame? Town or country? The amount that is to be spent in many instances is a controlling factor although within certain limits this factor is controlled by the extent to which a house is valued by the purchaser.

- What are some reasons for buying a house? Can you distinguish the non-economic reasons?

- What are some factors to consider when contemplating the purchase of a house?

- Why may two people of relatively equal means buy houses which vary widely in cost?

- From what sources are funds for purchasing homes available?

- How does the lender determine how much to lend?

- Does the borrower's income influence the amount of the loan?

- Investigate building codes in your locality.

- A family bought a house that was eight years old for $18,900. They lived in it for 10 years, making normal repairs needed to keep the property in good condition. When they sold the house, they received $20,750 for it. Can you give some reasons why a house would increase in value as it gets older?

- Have the class make a list of items to be checked when looking for a house to rent or to buy. Include questions about the neighborhood, exterior, interior, appliances, entrance, utilities and floor plan. If the unit is to be rented, include questions about maintenance responsibilities of the tenant and of the landlord. Perhaps a local real estate firm will work with the class and allow committees to test the checklist against local properties for sale or rent.

THE MORTGAGE

While the idea of contracting to make regular payments for a period of twenty years or more is a sobering one, it is done every day and such contracts have made many dreams come true. Aside from the obvious advantage of a loan to buy a home, there are other benefits to be derived. A good repayment record helps increase a credit rating. In the event of inflation, the mortgage payment, unlike rent, does not rise with other costs.

Many lenders experienced in real property transactions suggest that the cost of a house may not exceed 2 and 1/2 times the annual family income. A method that may be used to estimate whether or not a family can afford a particular house is to approximate the monthly cost of owning it. This amount should be consistent with the family's housing budget. (It is important to recognize that the monthly cost of home ownership is not the same as the monthly mortgage payment.)

The size of the monthly payment is fixed by three determinants: the amount of the loan, the interest rate, and the length of time the loan is to run. The security for the loan is the house and the buyer's credit rating. The home buyer should shop for mortgages in order to compare charges and terms of the contracts.

- What is a conventional mortgage? Compare those offered by a savings and loan association with those offered by an insurance company.
- What is the origin of "mortgage"?
- What is an appraisal?
- What is an F. H. A. insured loan?
- What is a construction loan?
- What is a V. A. approved loan?
- What is a regular mortgage?
- How do interest rates and repayment plans differ from lender to lender?
- What are closing costs? Are they the same for each $20,000 house?
- Compare a reduction payment plan with the regular payment plan for amortized type mortgages.
- Compare and contrast Federal Housing Administration loans with The Farmers Home Administration loans.

FURNISHINGS

Housing implies more than a building or a part of a building. Certain fixtures, furnishings and appliances are required to make a building habitable.

Some of these fixtures and furnishings are required by statutes; however, it is personal taste based on individual values that determine what is to be minimal in most cases.

- What minimum standards of plumbing and fixtures are set for your locality?
- What appliances do you consider essential? luxuries?
- What factors should be considered in purchasing a refrigerator? a water heater? a stove? a heating system? an air conditioner? a television? a freezer?
- Which is the most significant in an appliance - beauty or utility?
- What are the local regulations concerning electrical wiring? heating? plumbing?
- Sketch a floor plan of a room showing the location of furniture, fixtures, and appliances. Draw to scale. Determine the cost of the furniture and appliances.
- List some occupational opportunities (other than in sales) associated with home furnishings.
- How does room size influence the selection of furniture and appliances?

UTILITIES

Maintaining a residence usually involves incurring expenses for telephone, electricity, water and gas. In order to arrive at a reliable estimate of the annual cost of maintaining a home, the students should be able to determine utility costs. A familiarity with utility rates and the units of measurement for each is desirable.

- What is the basic unit in measuring electricity in your locale?
- Compare the rates if there is more than one supplier of electricity in the area.
- What is the basic unit in purchasing natural gas? water?
- How do you read an electric meter? a water meter? a gas meter?
- What are some unusual circumstances that might cause an increase in expenditures for certain utilities? a decrease?
- What advantages/disadvantages accrue to a utility customer?
- What governmental agency is concerned with utility companies?
- What is a monopoly? Is a utility company a monopoly?
- Is the average monthly cost of maintaining a house without air conditioning less in the summer than in the winter?
- What effect does the location of the house have on utility rates?
- List some occupational opportunities associated with home utilities.

MAINTENANCE

Maintaining a house in good repair in order to make it more livable and to preserve its value is a problem more often faced by owners than by tenants. So important are some phases of home maintenance that people generally contract the work. In other areas, many house owners join the do-it-yourself club.

Many people get double value from some housing dollars by incorporating recreation with home improvements. Landscaping, for example, is a hobby enjoyed by some people. Adding to recreational facilities of the home on a do-it-yourself basis is another way in which dollars are doubled, such as adding an outdoor grill or a play area.

It may be that some recreation dollars can improve a home's value in both utilitarian and financial ways. The home swimming pool is an illustration. Students should be cautioned to look into such purchases and activities carefully, taking into account original outlays, maintenance costs, and legal responsibilities.

- What does preventive maintenance mean?
- What are some parts of maintenance that might better be contracted than done by the owner?
- In what area(s) may the owner feel qualified to do the work himself?
- What risks are involved in do-it-yourself repairs?
- How can you estimate how much area a can of paint will cover?
- What are some occupational opportunities associated with home maintenance?
- What units of measure are used in selling ready-mix concrete? lumber? nails? wall panels? bricks? roofing materials? crushed rocks?

PAINTING

The cost of painting may be computed by considering four factors:

1. The area to be covered
2. Labor costs
3. The covering capability of the paint
4. The cost of the paint

For a given paint job, the first two factors are constant and the last two are generally directly proportional. That is, as covering capability increases, so does the cost. Since the cost of putting the paint on is going to be about the same regardless of the paint, it may be wise to give some consideration not only to the covering capability but also to the durability of the paint. It may be more economical to use a better paint than to have to repaint in a short while.

Structural dimensions are frequently given in terms of length, width, and height. Thus a room 14' x 12' x 8 1/2' is 14 feet long, 12 feet wide and 8 1/2 feet high.

Wall area is room perimeter times the height. In the example above, the perimeter is 14' + 14' + 12' + 12' = 52' and 52' x 8 1/2' = 442 square feet of wall surfacing.

Note: As a rule in estimating paint needed, no allowance is made for windows or doors since this practice allows some leeway in the estimate.

Ceiling area is room width times room length. The labels on paint containers usually estimate coverage.

MOVING

Almost anyone can anticipate changing his place of residence several times during his lifetime. As our society becomes more mobile, the expectation of a given individual making such a move becomes greater. No matter how welcome the change may be, there is a certain degree of trauma associated with moving. The discomfort may be the result of human inertia; nevertheless, it is present and its presence transcends material possessions and distance.

The manner in which an individual prepares for moving depends on what is to be moved and where it is to be relocated. Many people move their possessions in the backseat of a car, some rent trailers, some hire vans. Even those who live in mobile homes are not immune to moving maladies, for everything that is movable must be made secure before moving.

. What are some factors that influence the mobility of our society?

. If you were planning to move to a different place, how would you plan to make the move?

. How does the trailer-truck rental business operate? Do all rental concerns have the same rates?

. What are some of the costs of moving?

. What are some inconveniences?

. How do commercial movers determine their rates?

. Is the insurance provided by these companies adequate?

. What risks are involved in hiring commercial movers?

. What risks are involved in do-it-yourself moving?

RELATED PROBLEMS

When Dan D. Lyon had his mother, Van Lyon, moved from New Orleans to his home several hundred miles away, he hired a commercial mover to transport her possessions. On receiving the shipment he noticed the following:

> He was billed $13.75 for packing cartons which were either not used or not needed.
>
> He noticed that the bill showed the shipping weight to be 1460 pounds, a figure that appeared unreasonably large. He was charged at the rate of $13.50 per 100 pounds or fraction thereof.

Assume that $55.00 worth of packing boxes were justifiably used and billed. How much was the original bill for packing cartons? (Answer: $68.75)

What was the original transportation charge? (Answer: $202.50)

What was the total of the original bill? (Answer: $271.25)

Mr. Lyon contacted the moving company and at their request took the items shipped to be weighed. He received a weight ticket showing:

4440	Gross
3480	Tare
960	Net

For how many excess pounds had he been charged? (Answer: 500)

How much was he overcharged for transportation? (Answer: $67.50)

Mr. Lyon spent $6.50 for a pickup truck to take the items to be weighed. He also spent seven hours in moving cartons and writing letters to the company. He requested refunds for the overcharge for transportation, the packing overcharge, and payment for the truck as well as $2.00 per hour for his labor. The company allowed him his request. How much did he receive? (Answer: $101.75)

NOTE: In essence, the data in this problem was drawn from an actual case. This problem is included to illustrate that most companies are reasonable and will settle claims for overcharges if the claims are made and substantiated.

A building contractor agreed to build a home for a client. His commission was 10 percent of the cost of the house. The following items, including labor, were listed: masonry - $850; excavating - $700; carpentry and millwork - $6250; painting, papering, plastering and finishing - $1800; roofing - $700; plumbing and heating - $1750; electrical wiring and fixtures - $425; other work such as tiling, linoleum, landscaping - $1000. What was the total cost of the house to the buyer? (Answer: $14,822.50)

Walter Wall, the President of Soft-N-Plush Interiors, placed the following ad in the Daily Blab:

> DuPont Nylon carpeting completely installed
> for only $5.95 per square yard.

If the living room measures 11 1/2' x 18', what will be the cost of carpeting this room if you take advantage of this sale? (Answer: $136.85)

The Shady Landscaping Company will completely sod your lawn for 12 1/2¢ per square foot. If your rectangular shaped lot measures 75' x 150', and 2/3 of the lot needs to be sodded, what is the cost of having this service done? (Answer: $937.50)

You have a room that is 10' x 12' x 8 1/2':

a) Find the cost of covering the floor with six feet wide linoleum if the price is $1.79 a running foot. (Answer: $35.80)

b) Find the cost of covering the floor with six inch square (not six square inches) linoleum tiles if the price of the tile is 16 1/2¢ each. (Answer: $79.20)

c) Find the cost of covering the floor with nine inch square tiles if the tiles are priced at 23¢ each. Use all pieces. (Answer: $49.22)

d) Find the cost of covering the floor with carpeting at $4.95 a square yard. (Answer: $66)

You wish to repaint a room that is 14' x 12' x 8 1/2'. The paint costs $6.50 per gallon and $1.85 per quart. One gallon will cover 425 square feet. Find the cost of the paint. (Answer: $13.00 if two gallons are purchased. $10.20 if one gallon and two quarts are purchased.)

ELECTRICITY

Residential Rates

Table 1 (all-electric rate: electric heat & hot water heater)

First 50 kw-hr	@3.9¢
Next 100 kw-hr	@2.9¢
Next 50 kw-hr	@1.9¢
Next 2300 kw-hr	@1.1¢
Additional kw-hr	@1.0¢

Table 2 (home with hot water heater)

First 50 kw-hr	@3.9¢
Next 100 kw-hr	@2.9¢
Next 100 kw-hr	@1.9¢
Next 500 kw-hr	@1.5¢
Additional kw-hr	@1.35¢

Activity:

. Compare these electric rates with rates from your local supplier of electricity.

Problems:

Suppose a 100-watt bulb burned for 10 hours. This bulb uses 100 watts in one hour; how many watts will it use in 10 hours? (Answer: 1,000)

How many kilowatt-hours of electric power would it use? (Answer: 1)

A family qualifying under Table 2 of the residential rates used 287 kilowatt hours in a month. What is their electric bill for that month? (Answer: $7.31)

John Smith's July 30 electric bill shows a meter reading of 5289 kilowatt hours and a June 30 reading of 2889. Since Mr. Smith is on an all-electric rate (electric heat and electric hot water heater), he would qualify for Table 1 rates. What is his monthly bill? (Answer: $30.00)

If electricity costs 3.9¢ per kilowatt hour, how much will it cost to the nearest cent to operate a TV set that uses 150 watts per hour for 24 hours? (Answer: $.14)

TELEPHONE

Find the total cost of the following telephone bill:

Monthly charge	$5.35
10% Federal tax	____
3% Local tax	____
Total bill	____

(Answer: $6.05)

HOME IMPROVEMENTS

A contractor offers to build you a patio at the rate of 26¢ per square foot including materials and labor. On the other hand, he will charge you only 7¢ per square foot for labor alone if you supply the materials. You find that the cost of materials would be $181.00 Your patio measures 15 feet wide and 70 feet long. Which will cost you less - to supply the materials and pay the contractor for his labor or to pay the contractor for both materials and labor? (Answer: You will save $18.50 if you supply the materials and pay the contractor for his labor.)

A plan calls for a rectangular patio measuring 27 feet long, 18 feet wide and 4 inches thick. If concrete is sold at $15.80 per cubic yard, what will be the cost of buying enough concrete to complete this patio? (Answer: $94.80)

Mr. Smith needs to pave a driveway which measures 200 feet by 10 feet. An asphalt paving contractor agrees to do the job for $3.25 a square yard. A concrete contractor quoted the price of $.43 per square foot. Which is the cheaper price quoted? By how much? (Answer: Asphalt is cheaper by approximately $137.77)

A rectangular floor 15 feet wide and 18 feet long is to be covered by 12-inch x 12-inch tile at a cost of 32¢ per tile. What is the total cost of the job? (Answer: $86.40)

The same floor area might be covered with wall-to-wall carpet at an installed price of $8.99 per square yard. What is the cost of carpeting? (Answer: $269.70) What is the difference between carpeting and tiling? (Answer: $183.30 more to carpet.)

ADDITIONAL ACTIVITIES

In addition to the other activities, you will find these helpful in summing up this unit:

- Figure the cost of carpeting your classroom with $8.95 per square yard carpet if the charge is $1.50 per square yard for installation, and $1.50 per square yard for padding.
- Figure the cost of laying tile on your classroom floor. Use your judgement as to the cost of square 9-inch tiles after doing some comparative shopping in your community.
- From realty advertisements, find a house for sale or rent in your locality that might be suitable for a family of five, children ages 5, 9 and 14; yearly income before taxes $5,500. After investigation, consider - will rental or purchase of a house be better for this family?
- Invite a building inspector to speak to the class about local building problems.
- Divide the class into groups to do the following scale drawings and make models from construction paper or other heavy paper. Sketch a plan of a room showing the location of furniture, fixtures and appliances. Determine the cost of the furniture, fixtures and appliances. All of this work should be done using the same scale.
- Invite a realtor to speak to the class on home ownership and perhaps arrange a class visit to a home for sale.
- Schedule a trip with a realtor through a housing development and allow him to describe the various features of the homes.
- How many rooms should your home have? Have the class discuss the uses of a home in relationship to family size and needs.

PARTIAL AMORTIZATION TABLE OF FHA MORTGAGE

MONTHLY PAYMENT PER $1000

(Including principal, interest, and FHA Insurance at 1/2%)

Interest Rate 7 1/2%

Term of Loan	Monthly Payment
10 years	$12.14
15 years	9.56
20 years	8.37
25 years	7.72
30 years	7.34

Down Payment Policy:

On new construction or existing structure under one year old built under FHA or VA inspection

3% of first $15,000
5% of next $5,000
20% of excess over $20,000

On existing structures over one year old or structures less than one year old not built under FHA or VA inspection

10% of first $20,000
20% of excess over $20,000

PARTIAL AMORTIZATION TABLE OF CONVENTIONAL MORTGAGE

MONTHLY PAYMENT PER $1000

(Includes principal and interest).

Interest Rate 8%

Term of Loan	Monthly Payment
10 years	$12.14
15 years	9.56
20 years	8.37
25 years	7.72
30 years	7.34

Down payment on new construction and existing structures - 25%

Mun E. Sachs and his wife, Silva, have decided to buy a $20,000 house in a new development. They are going to finance their house with a conventional mortgage.

Find: (Use the table when needed)

a) The principal of the loan (Answer: $15,000)

b) The amount of monthly payment if the term is 30 years. (Answer: $110.00)

c) The amount of monthly payment if the term is 20 years. (Answer: $125.55)

d) The total amount of payments on a 30 year term. (Answer: $39,636)

e) The total amount of payments over a 20-year term. (Answer: $30,132)

f) The difference between (d) and (e). (Answer: $9,504)

Mr. and Mrs. Moe Bill Holm find that their trailer is simply too small. They have been looking at a new house that is priced at $26,000. There is another house, three years old, that they like just as well. This house is priced at $25,000. Both houses were constructed under F.H.A. inspection. They plan to use F.H.A. financing.

a) What is the minimum down payment on the $26,000 house? (Answer: $1900)

b) What is the minimum down payment on the $25,000 house? (Answer: $3000)

Suggested Reading Assignments:

"Mortgage Facts Every Home Owner Should Know," GOOD HOUSEKEEPING 164:295, April, 1967.

Norris, J.W. "Indoor Comfort All Winter, Warm Air Heating Systems," HOUSE BEAUTIFUL 110:14+, February, 1968.

"Second Mortgages: How and When to Use 'em?" CHANGING TIMES 21:15-17, January, 1967.

"Should You Be A Landlord? Investing in Rental Properties," CHANGING TIMES 22: 33-35, March, 1968.

Watkins, A.M. "How to Buy A House Without Getting Hooked," POPULAR MECHANICS 120:124-127, March, 1968.

"Before You Buy Your New Home," PARENTS MAGAZINE 43:74, April, 1968.

"Brand New Home for $6,000," CHANGING TIMES 22:39-42, April, 1968.

Browne, H. "Lessons From A First Apartment," AMERICAN HOME 71:72-75, October, 1968.

"Buy or Rent? It All Depends," U. S. NEWS AND WORLD REPORT 64:78, May 13, 1968.

Edwards, C. M. "Choosing a Mobile Home," CONSUMER BULLETIN 51:34-39, September, 1968.

"Financing a House," CONSUMER REPORTS 32:398-401, December, 1967.

Gough, M. "How To Find an Apartment if You Have Never Looked Before," HOUSE BEAUTIFUL 110:46+, October, 1968.

"One Housing Boom That Is Growing," U. S. NEWS AND WORLD REPORT 64:82-83, March 11, 1968.

Winsor, H. B. "A Hunting We Go - For a House," CHANGING TIMES 22:43-46, June, 1968.

Lindberg, P. "Is a Home Still a Good Investment?" BETTER HOMES AND GARDENS 47:46-54, September, 1969.

RESOURCES

U. S. Savings and Loan League 221 North LaSalle Street Chicago, Illinois 60601	What You Should Know Before You Buy a Home (free booklet)
U. S. Department of Agriculture Farmers Home Administration Washington, D.C. 20205	Rural Housing Loans (free booklet)
Better Business Bureau of Guilford County P.O. Box 2400 225 North Greene Street Greensboro, North Carolina 27402	27 Questions for Home Owners - regarding repairs, remodeling, home improvements. (free leaflet)

FILMS:

Modern Talking Pictures Services, Inc. 503 North College Street Charlotte, North Carolina 28202	At Home - 2001 #3005 (30 min., color) Here is a fascinating look at the completely self-sufficient home of the 21st Century.
	What You Should Know Before You Buy a Home #1881 (27 min., black & white) Outlines the important things to consider before purchasing a house: space, location, convenience, age, and cost.

American Society of Interior Design
331 Madison Avenue
New York, New York 10017

Home Decorating Made Easy
(13 1/2 min., color)
Tells the story of a young couple who visit a flooring dealer.

National Cotton Council of America
Audiovisual Services
Box 12285
Memphis, Tennessee 38112

The Place You Hang Your Hat
(11 min., color)
Illustrates the basic steps in home decoration, showing how a bare apartment is turned into a home.

Trouble with Windows
(13 min., color)
Collection of simple, inexpensive treatments for windows.

Association Films, Inc.
2227 Faulkner Road, N.E.
Atlanta, Georgia 30324

How To Fight a Fire in the Kitchen #S-491
(5 min., black & white)
Fire safety film shows how to cope with small fires in the kitchen. (free on loan from September 15-December 31)

Until the Fire Department Arrives #S-530
(5 min., black & white)
Contains important suggestions on how to use those precious minutes between the turning in of the alarm and the arrival of the fire department. (free on loan from September 15 - December 31)

National Institute on Rug Cleaning
Mr. Robert F. Coleman,
Managing Director
1815 North Fort Myer Drive
Arlington, Virginia 22209

What Now
(13 1/2 min., color)
Shows how the carpet owner can remedy spots and spills before they become permanent stains.

TAXES

When a company looks for a new plant site, many of its requirements are similar to the needs of a family looking for a home. Both need a pure water supply, good roads and adequate waste disposal. The family wants a good school system, police and fire protection, and facilities for recreation and health care. Not so obvious to some is the fact that these are also needs of the company. Employees will be unwilling to live in the area if these services are not provided by the community.

These services are not donated to either group by the community. The community simply acts as a purchasing agent, using money obtained by taxing the family and the company.

In developing the unit on taxes one of the primary goals should be to help the students recognize that the taxpayer is buying a wide variety of services. Our system of taxation is based on the principle of community action - many contribute small amounts to buy services too expensive for individual purchase. When a student's first question is "What is the tax buying?" instead of "How much?" then he has taken a long step toward being an active, rather than a reactive, citizen.

Your students already pay taxes, either directly or indirectly. At the same time that they are discovering the many ways they contribute to the funding of governmental services, ample opportunities will arise for them to learn how to prepare returns and compute their taxes.

If the students understand that they are helping to foot the bills for services on the national, state and local levels, they will appreciate the opportunity to investigate public finance and the policies by which that financing is governed. The student needs to know about taxes not only to assume his role as a taxpayer, but also to assume his role as an informed voter.

A. Objectives

1. The student identifies services provided through governmental purchases.

2. The student describes taxation as a way for expensive services to be provided for people of all income levels at relatively low individual cost.

3. The student explains that in a system of free enterprise the wealth of a governmental unit is derived from taxes.

4. The student recognizes that the taxation policies of most governmental units are a compromise between taxing according to benefits received and taxing according to ability to pay.

5. The student can complete required state and federal income tax returns.
6. The student can compute the amount of direct taxes he is required to pay.
7. The student can determine the cost of indirect taxes such as sales taxes.
8. The student determines how keeping records can make tax reporting easier.
9. The student demonstrates how property taxes are levied in his local governmental unit.
10. The student lists sources of revenue and services provided by his local government and by the State of North Carolina.
11. The student lists sources of information concerning taxation on the local, state and federal level.

B. Suggested Topics for Study

1. Federal and State Income Tax
    - a. History
    - b. Services purchased
    - c. Individual tax return
        - 1) Tax forms
        - 2) Income records
        - 3) Filing status
        - 4) Exemptions
        - 5) W-2 forms
        - 6) Taxable income
        - 7) Deductions
        - 8) Tax computation
        - 9) Refunds
        - 10) Payment of tax due
    - d. Records
    - e. Penalties for non-compliance

- f. Recent changes in tax laws
- g. Differences between state and federal taxes

2. Property taxes
    - a. Administration
    - b. Kinds
        - 1) Real
        - 2) Personal
        - 3) Intangible
    - c. Evaluation
    - d. Assessed value
    - e. Rate
    - f. Amount due
    - g. Services
    - h. Listing
    - i. Paying
    - j. Penalties for non-compliance
3. Other taxes
    - a. Sales
    - b. Excise
    - c. Custom duties
    - d. Inheritance
    - e. Gift
    - f. Poll
    - g. Use

C. Mathematical Concepts
1. Percentage
2. Approximation

3. Operations with rational numbers
4. Ratio and proportion
5. Denominate numbers
6. Conversion factors in unit exchange

INTRODUCING THE UNIT

Almost everyone, and your students are no exception, has some notion about some forms of taxation. Usually such notions are based on what is paid and little consideration is given to what is received. It is the rule rather than the exception to take services and benefits returned to the taxpayer for granted. Surprisingly, some people whose salaries are derived from taxation take this same position.

The following questions, activities and assignments are designed to draw from the student his conceptions about taxation on the national, state and local levels, as well as about the services provided by tax dollars. The teacher is cautioned not to be dismayed if some of the original ideas are sketchy or incorrect. Recall that this is a laboratory type course and that good learning is often achieved by comparing fancy with facts.

- How much tax did *you* pay last week? To whom did it go?
- List the different taxes that the student-consumer pays. What kinds of taxes do other people pay?
- What do we get for our tax money?
- What recent legislation has affected taxes?

For a change of pace, you might wish to divide the class into 'buzz groups' assigning each group a question and having them report their conclusions to the entire class.

The activities listed above should open the door into an investigation of taxes by types. Your students can group taxes by the form of taxation or by level of taxation.

Income Taxes

Perhaps you are already familiar with the Teaching Taxes unit available annually from the U. S. Internal Revenue Department. The unit teaches return completion through practice, and the accompanying text explains the use of tax dollars. The materials may be more effectively assimilated by the students if they do some investigating of their own to find out where the Federal income tax dollar goes before working on the forms.

Some Opening Activities:

Federal Income Tax

- Where does the Federal tax dollar go?

- How are Federal income taxes collected?

- What does tax evasion mean?

- Classify as civil or criminal breaches: failure to file a return and failure to pay amount due.

- How does Uncle Sam check the income tax returns?

State Income Tax

Although there is not a teaching unit for State taxes, the State forms are available in sufficient quantities for classroom use.

- What services do we get for our State income tax dollar?

- How are State income taxes collected?

- Where can assistance with returns be obtained?

- How do we file returns?

Opening statements again put emphasis on services as the basis of discussion; computation, however, need not be overlooked. For example, percentages can be applied in comparing governmental expenditures for various services. Computation also enters the picture in preparing tax returns.

In discussing both the State and Federal forms, other forms of taxation will be mentioned; therefore, these topics will help introduce others.

Property Tax

Some questions that may help you introduce this topic are:

- What services does our county (city) provide?

- Where does the money come from?

- What is property?

- What kinds of property are there?

- What is assessed valuation?

- How is property taxed?

- Where can we find out about these things?

These questions will require time and further study beyond the classroom. You can name teams of investigators to search for the answers.

Hopefully, the investigations will result in class discussions in which computation will be needed. Percent plays an important role in property taxation and the distribution of the tax dollar on the local level is a good theme for a project.

- Have some students obtain the county or city budget. In class determine what percent of the tax dollar is spent for each of the itemized services.
- Have students request similar schedules from other counties (cities).
- Create a mythical "town father" problem. The need: an indoor pool for every high school in the administrative unit. Estimate the cost. Increase the taxes enough to pay for them in one year; in five years. Compute the amount of tax increases for a person who owns property valued at $15,000 under each plan.

  This project could involve the entire class; some could collect data on pools, giving consideration to factors as enrollment, health requirements, cost of construction, cost of operation, etc. These people could serve as consultants for the rest who can be treated as the town, city or county commissioners.

Other Taxes

Taxes other than income and property taxes will be introduced during the study of previous topics. The limit of the students' awareness of the less obvious taxes may be determined by one or more of the following activities or questions:

- What other taxes do we pay?
- List some goods and/or services which are specially taxed.
- Why are some things taxed while others are not?
- What taxes are associated with gasoline?
- Based on the total tax bill for a family, determine the distribution of its tax dollar both by level (national, state, county, municipal) and by services. This will make an interesting display for the bulletin board, as well as present an opportunity for considerable computation.
- Create a mythical highway project, estimate the cost; compute how many gallons of gasoline must be sold for the state to pay for it. How far could you drive at 60 m.p.h. on this quantity of gasoline? Use the average gasoline consumption rate of your students' cars.
- Investigate the recent changes in tax laws in North Carolina. Have students estimate how much additional tax they will pay next year as a result of these laws.

Additional Activities/Projects

. Have students who work bring their individual W-2 forms to class and complete their own tax returns.

. Have several students make a list of items that are deductible on the Federal return and have several other students make a list of items that are deductible on the State income tax return. Report to the class and compare the findings.

. Invite a local businessman to discuss with your class the different permits that he has to obtain so that he might operate his business.

. Have the city or county tax assessor visit the class to discuss property tax.

. Have each student list all the items that he purchases for a week and determine the amount of taxes that he pays.

. Attend a city or county commissioners' meeting .

RELATED PROBLEMS

Express the rate of $45.75 per $1,000 as an equivalent rate (a) per $1.00, (b) per $100. (Answer: (a) $.04575 (b) $4.575)

A town has to raise $252,789 to meet its expenses for the coming year. If the total assessed value of property in the town is $6,462,400, approximately what will the tax rate have to be in dollars per $1,000? per $100? (Answer: $39.20; $3.92)

When Mr. Jones filed his State income tax return, he showed a net taxable income of $1,780. In his state, the net taxable income is subject to a tax of 3 percent on the first $1,000 and 4 percent on the next $2,000 or part thereof. What is the total tax Mr. Jones had to pay? (Answer: $61.20)

The assessed value of Mr. Smith's home is $6,000. (a) If the county tax rate is $1.47 per $100 and the tax rate of the town in which he lives is $1.75 per $100, what is his annual tax? (b) How much is this per month? (Answer: (a) $193.20; (b) $16.10)

Your Town, North Carolina, has recently installed 600 parking meters in the downtown area.

(a) If they expect to collect $11.85 from each meter every week, what is their anticipated weekly income from all the meters? (Answer: $7,100)

(b) If the meters are in operation from 9:00 a.m. to 5:00 p.m. daily, except Sunday, what is the anticipated hourly income from all the meters? (Answer: $148.125)

(c) Peter Paul, the meter reader, is assigned the task of collecting the money from the city's parking meters. If the container he carries will hold only $25 in change, how often will he have to empty it on his daily rounds? (Answer: 48 times)

During the school year 1967-68, the average cost per pupil for education in the public schools of North Carolina was $465.39. At this rate, what would be the cost of maintaining a school with an enrollment of 1000 pupils for a year? (Answer: $465,390)

Fred made a serious mistake last year - he failed to report his sales tax to the State. If his sales totaled $97,432, how much should he have sent the North Carolina Sales Tax Division? Assume he pays 3 percent in sales tax. (Answer: $2922.96)

A. Ker Ryder paid $2.80 to use the Hurry Thru State Toll Road. If the road was 120 miles long, how much toll did he pay per mile for use of the road? (Answer: 1.13¢)

Willie Wenn has $10 with which to buy his girl friend a birthday present. What is the most expensive box of candy he can buy and have enough money to pay the tax? (Answer: $9.71 if the total sales tax is 3%)

Irma Loansum made a three-minute person-to-person call to Hawaii. The rate was $9.50 plus 10% federal excise tax. How much did Irma pay for the call? (Answer: $10.45)

Suggested Reading Assignments:

Henly, A. "No More Taxes for Bob Hayes (Well Practically) Will It Last?", LADIES HOME JOURNAL 85:128+, May, 1968.

Carlisle, N. "Answers to Often-Asked Income Tax Questions," MECHANICS ILLUSTRATED 64:6+, March, 1968.

"Taxes: Are They Worth the Price?", SENIOR SCHOLASTIC 92:3-5, February 1, 1968.

"Tax Increase: How It Will Work," U. S. NEWS AND WORLD REPORT 64:105-7, May 20, 1968.

Friedman, M. "Taxes: The Hard Sell," NEWSWEEK 71:84, May 13, 1968.

"Advocate and Judge - Administration's Arguments for a 10% Tax Surcharge," TIME 91:19-20, February 2, 1969.

"Answers to Your Questions about New Tax Laws," U. S. NEWS AND WORLD REPORT 65: 88-90, July 15, 1968.

Bloom, M. T. "Who Says It's Deductible?", MCCALL'S 95:87+, April, 1968.

"Even the Well-Off Americans Feel Poor," BUSINESS WEEK 64:34-36, February 12, 1968.

"Excises Get An Extension," BUSINESS WEEK 107-108, April 13, 1968.

Friedman, M. "Negative Income Tax," NEWSWEEK 72:86, September 16, 1968.

"GH Poll: Should Tax Credit Be Given for College Costs," GOOD HOUSEKEEPING 166: 30+, March, 1968.

"Income Tax Checklist: Deductions and Exemptions," CHANGING TIMES 22:13-14, April, 1968.

"Let Your House Cut Your Tax Bill," CHANGING TIMES 21:39-41, October, 1967.

"1968 Tax Surcharge," SENIOR SCHOLASTIC 93:21-22, October 4, 1968.

"So You Think Your Taxes are High; Tax Burdens in U. S. vs. Other Leading Nations," U. S. NEWS AND WORLD REPORT 64:64-65, April 14, 1968.

"Tax Benefits in the Sale of a Home," GOOD HOUSEKEEPING 166:198, March, 1968.

"What's in The Package; Effects of Surtax," TIME 91:71, July 26, 1968.

"Ways to Save on Your Taxes, Steps You Can Take Now," U. S. NEWS AND WORLD REPORT 63:106-108, November 27, 1967.

"Where State and Local Taxes Go," CHANGING TIMES 21:24-25, October, 1967.

"Why Indirect Taxes are Winning Converts," BUSINESS WEEK 168+, April 20, 1968.

"Taxes, The Collection and Distribution of Your Money," SATURDAY REVIEW, special issue, March 22, 1969.

RESOURCES

District Director U. S. Department of Internal Revenue P. O. Box 20541 Greensboro, North Carolina 27420	*Tax Teaching Unit* - order before *November 15.* (free kit)
Kings College 322 Lamar Avenue Charlotte, North Carolina 28201	*Income Tax Guide for Your North Carolina and Federal Returns.* (free booklet)
County (City) Tax Office	Local tax rates, local budgets, old tax invoices
North Carolina State Department of Revenue Raleigh, North Carolina 27602	Tax forms - income, sales, gasoline, highway, liquor, intangibles

FILMS:

District Director Internal Revenue Service 3205 Ashe Street Greensboro, North Carolina 27401	*Mission for Millions* (20 min., color) Tells history of federal taxation, story of the Internal Revenue Service, describes how tax returns are checked. *Then and Now* (22 min., color) Gives history of federal taxation, describes services provided by these taxes.

CONSUMER CREDIT

While there are perhaps as many different views as there are people when credit in general is considered, value judgments tend toward two camps - good and bad - where consumer credit, in particular, is concerned. One of the major purposes of this unit is to take an objective look at consumer credit and by doing so equip the student to make intelligent judgments of his own.

The consumer is the heart of the free enterprise system; the function performed by money is its life's blood, and credit, performing similarly to money, is its nourishment. Business has as its purpose the production of goods and services and placing them in the hands of those who want them. When production and spending continue uninterrupted, business operates best. Consumer credit contributes much to make this possible.

However, when your students are constantly bombarded by such enticements as "signature loans," "no money down," and "easy payments" and when installment credit is so conveniently arranged, it is easy for them to become confused. Through involvement in the discussions and activities of this unit, your students should be prepared to make more intelligent decisions in their role as consumers. More mileage from their dollars should lead to more happiness in their lives.

A. Objectives

1. The student understands the interrelationships of credit and the nation's economy.
    a. The student understands that fluctuations in the use of credit affect inflationary trends in the economy.
    b. The student realizes that credit is used by local, state and national governments; by business; and by individuals.
    c. The student recognizes the relationship that exists between savings and credit.
    d. The student is aware of social changes effected by consumer credit.
2. The student knows the difference between consumer installment and non-installment credit.
3. The student recognizes the advantages of wise credit usage.
4. The student realizes that the primary disadvantages of credit are found in the way credit is used.
5. The student realizes that a lender will consider character, capital and capacity when a borrower tries to establish credit.
6. The student understands how an individual maintains a good credit rating.

7. The student can estimate the amount of credit he can afford.

8. The student identifies the distinctive features of different loan plans.

    a. The student can determine the amount of interest on credit.

    b. The student can compute the rate of interest.

    c. The student can determine the difference between the costs of various credit plans.

    d. The student can compute the total credit prices and the amount of monthly payments for a loan if he knows the amount of the principal, additional fees, terms of notes and the rate of interest.

    e. The student can convert money cost of credit into working time needed to produce the money.

9. The student uses the community sources of information.

10. The student understands the legal aspects of a contract before signing it.

11. The student can identify the prospective borrower's right under the Truth-in-Lending Act.

12. The student is able to interpret and compute the different types of income - gross, net or disposable income, and discretionary income.

B. Suggested Topics

1. Truth-in-Lending Act

2. Types of consumer credit

    a. Open accounts

    b. Revolving accounts

    c. Budget payment plans

    d. Credit cards

    e. Ready-Reserve plans

    f. Installment cash credit

    g. Life insurance loans

    h. Pawn shop loans

    i. Commercial loans (a consumer may obtain a "commercial" loan)

3. Uses of consumer credit
    a. Major item purchases
    b. Refinancing existing payments
    c. Travel and vacation
    d. Meeting unforeseen needs
4. Cost of consumer credit
    a. Interest
    b. Additional charges
        1) Investigation of application
        2) Collection expenses:
            a) Statements
            b) Records
            c) Follow up
        3) Cost of bad debts
        4) Cost of interest on borrowed capital
    c. Required credit insurance
5. Using credit
    a. How
    b. Where
    c. When
    d. Why
    e. Advantages
    f. Disadvantages
6. The credit contract
    a. Promissory note (signature)
    b. Open-end
    c. Conditional sales
    d. Deed of trust

   - e. Balloon payment contracts

7. Legal aspects
   - a. Foreclosure
   - b. Delinquency
   - c. Usury
   - d. Equity
   - e. Repossession
   - f. Licensing
   - g. Bankruptcy

8. Mathematical concepts
   - a. Simple interest
   - b. Fundamental operations involving rational numbers
   - c. Percentage
   - d. Estimation and rounding
   - e. Use of formulas
   - f. Decimal and common fractions

INTRODUCING THE UNIT

- What is credit?
- How would our business system be affected if the use of credit were prohibited?
- What would happen if everyone were required to pay all outstanding debts by tomorrow noon?

These brief questions might be used to introduce the unit. Let the students answer them before you give any assignment. Do not become alarmed if their answers contain misconceptions. Their responses give you an excellent opportunity to help your students find better answers.

Suggested Activities and Leading Questions:

- Have the class make lists of: ways people use credit; kinds of credit based on (a) what the consumer receives, (b) how the consumer pays.

- Ask students to prepare: some arguments for using credit; some arguments against using credit.

- Collect credit plan descriptions from mail order houses and/or local businesses. Discuss their similarities and differences.

- Conduct a survey of credit attitudes. If the class has studied the unit on statistics, they might make use of data to discuss attitudes found in different age groups, different sexes, different occupations, etc. Compare class data with the results of a school survey.

- How do newspaper and magazine advertisements encourage the use of consumer credit? Collect examples.

- Are any local governmental agencies in debt? Why? How do they plan to liquidate the debt?

- Why should someone buy a washing machine (cash price $150) on the installment plan by paying $30 a month for six months, instead of saving $25 a month for six months and then paying the cash price?

- Does the consumer always pay more than the cash price when he buys on credit?

- Is credit a friend or foe?

As activities and discussions set the stage for a more careful analysis of credit, you may wish to assign a few daily computations using decimals and fractions. Use these to help diagnose individual student weaknesses.

Truth-In-Lending Act

The Federal Consumer Credit Protection Act went into effect on July 1, 1969. The law does not regulate the interest charges or other terms of consumer credit contracts. The official title of the Act is Consumer Credit Cost Disclosure. It provides for the disclosure of finance charges and annual percentage interest rates when consumers use credit. It requires all creditors to state charges in a simple uniform way so that consumers can compare costs when they shop for credit.

If the students understand the business and mathematical terminology now required for credit forms, the law will benefit them. As the class works on the unit, be alert for opportunities to help the students discover how the information supplied by the creditor can be used in decision making.

General Provisions of the Law:

- Any individual or organization that extends or arranges credit for which a finance charge is or may be payable, or which is repayable in more than four installments, must make all required disclosures to the purchaser.

- The provisions of the law apply to almost all consumer loans and installment purchases up to $25,000.

. The total of all costs the customer must pay, directly or indirectly, must be stated on the contract.

. Costs which would be paid by the seller if the customer paid cash must be itemized and shown to the customer.

. The annual percentage rate accurate to the nearest one quarter of one percent must be stated. Until January 1, 1971, this information may be listed in dollar terms such as "$14 finance charge per year per $100 of unpaid balance." The law permits several methods of computing the annual percentage rate on open-end credit accounts but for all other types of credit the actuarial method must be used.

. A merchant who extends open-end credit such as a revolving charge account and most credit cards must give the following additional information to the customer:

1) The monthly service charge (may be identified as the periodic rate) and how it is used.

2) The time period in which the balance can be paid without incurring a finance charge.

3) Whether the lender intends to use any of the customer's property for security.

4) The minimum payment to be made on each billing.

. Lender who extends credit other than the open-end type must give the borrower additional information including:

1) the total dollar amount of the finance charge

2) the date on which the finance charge begins to apply

3) the number, amounts and due dates of payments

4) any charges for late payments

5) a description of any security pledged for the loan

6) a description of any penalty charges for prepayment of principal

7) how the rebate for prepayment of principal, if allowed, will be figured

. On a credit sale or first mortgage loan to finance the purchase of a dwelling, the lender does not have to show the total dollar amount of the finance charge.

. All information must be supplied in writing.

. A customer may cancel a credit arrangement within three business days if his residence is used for collateral, provided the notice is sent in writing.

- Creditors may not advertise any specific credit term unless all other terms involved are stated clearly and can be seen easily.

- A customer may sue a creditor who does not meet the requirements of the law for twice the amount of the finance charge plus court costs and attorney's fees.

- Nine federal agencies are responsible for enforcement of the law in the business fields they supervise.

- A state law may be substituted if it has the same provisions as the federal law or is more stringent.

- All real estate credit transactions are covered by the law.

The finance charge and the annual percentage rate are the two most important disclosures required by this regulation. They tell the customer how much he is paying for his credit and its relative cost in percentage terms.

TYPES OF CREDIT

Most textbooks classify the different types of credit according to methods of repayment. However, the student often prefers a division based on the two principle types of commodities obtained through credit: (1) goods and services; (2) money.

BUYING GOODS AND SERVICES

Suggested Topics for Discussion:

- Buying services on credit such as utilities and professional services

- Installment purchases and charge accounts

  - Have students secure credit application forms from local stores. Discuss the similarities and differences.

  - List personal information requested on local credit applications. Discuss: Why are these questions asked?

  - Select items that students plan to purchase in the near future. Compare local cash prices with installment prices.

  - Use tables obtained from stores to determine monthly payments due for different credit plans.

  - Obtain a local sales agreement. Compile a list of words and phrases used and discuss their definitions.

    Examples: "retain title to and right of possession of"
    "encumber"
    "default"
    "warrant of attorney to confess judgment"

- Discuss advantages of installment buying.
- Discuss disadvantages of installment buying.
- Discuss the effect of inflationary trends, higher prices, and higher salaries on fixed payments.
- Discuss the same effects in terms of the earning time required rather than dollars.
- Discuss the effects of deflationary trends, lower prices, lower salaries, and possible unemployment on fixed payments.
- What costs are associated with credit purchases?
- Give some reasons why there is a charge for credit.
- Discuss some of the hazards of credit purchasing.
- What is bankruptcy? What recourse does the creditor have in the event of default? Obtain information about debtor's prison.
- If your area has a Chamber of Commerce of a Merchant's Bureau, see if the members have a credit code of ethics. Invite a representative to speak to the class.

If remedial work is needed on previous assignments and exercises, you may make use of better prepared students to help those who need assistance.

RELATED PROBLEMS

A student is interested in purchasing a portable record player that sells for $29.95 cash, or 10% down and $3.75 per month for 8 months. What will he pay for this record player if he buys it on credit? How much would he have saved if he had paid cash? (Answers: $33; $3.05)

Jim saw a surfboard for $40 which could be purchased at a 10% discount if paid for by cash. He was told that for $10 down and $10 a month for 4 months, it could be his. How much could he save by paying cash instead of buying on the installment plan? (Answer: $14)

The Mite-E-Cheep Discount Store sells stereo records at 33 1/3% below the manufacturer's suggested list price. If the list price is $4.98, how much do you save by buying a record at the Mite-E-Cheep? (Answer: $1.66)

The Ala Carte Charge Card Plan is similar to most credit card plans. Each month it charges its members 1 1/2% of the unpaid balance. If the balance on Marge's account this month is $1600, how much does she owe Ala Carte? (Answer: $1624)

Sarah was interested in purchasing a fur-lined raincoat. She found one at the Hi-Price Department Store that was marked at only $999.99. The clerk told Sarah she could place the coat in Lay-Away and pay $25 per month until she had it paid for and there would be no carrying charges. This sounded so good to Sarah that she decided to purchase the coat. How long will it be before she is able to wear the coat home? (Answer: approximately 40 months or 3 1/3 years)

Nita Lotta Doe, a working girl, in order to meet an unforeseen emergency, went to shop for a two-year loan of $900.

She secured the following information:

Nichols & Dymes Loan Company

Schedule of charges for 2-year loans:

1st $400 - $20 per year per hundred

Each additional $100 - $18 per year

MAXIMUM LOAN $600

Doe Ray Mee Finance Company

Schedule of charges for 2-year loans:

1st $400 - $20 per year per hundred

Each additional $100 - $18 per year

MAXIMUM LOAN $600

Shirley Wilsister Consumer Loans

Schedule of charges for 2-year loans:

1st $600 - $20 per year per hundred

Next $300 - $18 per year per $100

MAXIMUM LOAN $900

Nita decides that she has two alternatives:

1) Borrow $600 from Nichols & Dymes and borrow $300 from Doe Ray Mee

or

2) Borrow $900 from Shirley Wilsister

Which plan would be less expensive for Nita? (Answer: Plan #2 by $4.00)

Miss Minnie Skirt goes to Creek Bank and Trust Company to float a loan for a Florida vacation. The banker informs her that she will need a surety to sign with her. She asks Mark X. Down to do so. He says that he will be an endorser but refuses to act as a surety. Where would he sign and what would be his liability should he act as a surety? Where would he sign and what would be his liabilities should he act as an endorser?

(Answers: A surety signs as a co-maker on the front of the note. Mark X. Down's liability would be the same as Minnie Skirt's.

An endorser signs on the back of the note. His liability would be to make payment in case of default of Minnie Skirt. Should he have endorsed the note after writing "for guaranteed collection only," the bank would have to prove that they had exhausted all possibilities of collecting from Minnie Skirt before collecting from Mark X. Down.)

Name: Anna Penny					
Address: 321 Back Alley, Annatown, North Carolina 12345					
Date		Explanation	Charges	Credit	Balance
Dec	1	Balance			89.28
	2	Merchandise	124.62		213.90
	8	Refund		5.10	208.80
	11	Check		89.28	119.52
	15	Check		119.52	- - -
	17	Merchandise	194.35		
	20	Merchandise	153.14		
	24	Return		17.22	
	27	Check		194.35	
	29	Merchandise	79.13		
	30	Check		135.92	

A wholesaler keeps an account record with each customer to show how much the customer owes. Shown above is the Blank Book Company's record of transactions with Anna Penny for December. The amount of each sale to the customer is recorded in the "Charges" column. The same amount is added to the preceding balance, and the sum is entered in the "Balance" column.

The amount of each payment or return of merchandise received from the customer is entered in the "Credit" column. The same amount is subtracted from the preceding balance, and the difference entered in the "Balance" column. What does Anna Penny owe as of December 30? (Answer: $79.13)

Non-Dry Paint & Varnish Works, Inc.
Anytown, North Carolina 23456

Bill Derr Supply Company
0000 Main Street
Anytown, North Carolina 23456

Quantity	Description	Unit Price	Extension	Total
24 gal.	House Paint, White #5-604	$7.40		
48 qt.	Wall Paint, Ivory #7-113	1.85		
18 pt.	Spar Varnish #3-231	1.35		
	less 25% wholesale discount less 10% cash discount			

Complete the previous invoice by showing (a) the extensions (subtotal for each item); (b) the total list price; (c) the discounts; (d) the net price.

(Answers: (a) $177.60, $88.80, $24.30; (b) $290.70; (c) $94.48; (d) $196.22)

In March Mrs. Hunter Bargon realized she would need to buy some sheets and towels before the fall season. She decided to save $20 a month in April, May, June and July to use during the August White Sale. She saved a total of ______. (Answer: $80) On July 15, her daughter, Falalotte, broke her arm and Mrs. Bargon had to use the $80 to pay the expenses not covered by health insurance. Mrs. Hunter Bargon decided to use her bank credit card and charged the following items on August 15.

Item	Reg. Price	Sale Price	Charged to Acct.	Amt. Saved
6 sheets	$ 3.99 ea.	$ 3.49 ea.	____ (Ans: $20.94)	____ (Ans: $3.00)
6 pillowcases	2.00 pr.	1.79 pr.	____ (Ans: 5.37)	____ (Ans: .63)
8 bath towels	2.29 ea.	2.00 ea.	____ (Ans: 16.00)	____ (Ans: 2.32)
4 hand towels	1.29 ea.	1.15 ea.	____ (Ans: 4.60)	____ (Ans: .56)
8 wash cloths	.59 ea.	.49 ea.	____ (Ans: 3.92)	____ (Ans: .80)
8 dish towels	.80 ea.	.69 ea.	____ (Ans: 5.52)	____ (Ans: .88)
1 blanket	14.99 ea.	12.99 ea.	____ (Ans: 12.99)	____ (Ans: 2.00)
1 bedspread	19.00 ea.	16.00 ea.	____ (Ans: 16.00)	____ (Ans: 3.00)
			Total ____ (Answer: $85.34)	Total ____ (Answer: $13.19)
		+ 3% sales tax	____ (Answer: $2.56)	

The amount charged to Mrs. Bargon's bank card account was ________________. (Answer: $87.90)

On September 14, Mrs. Bargon received a statement from the Creek Bank with the following entries:

Type of Account	Prev. Bal.	Purch.	Returns & Adjust.	Payments	Finance Charges	New Balance
Merchand.	00.00	87.90	00.00	00.00	00.00	87.90
Cash Adv.	00.00	00.00	00.00	00.00	00.00	00.00
		Total	00.00	00.00	00.00	87.90

Statement Date	Credit Line	Past Due	Current Due	Total Due
9/12/69	400.00	00.00	87.90	87.90

369-004-842	10/6/69	$10.00	$87.90
Account No.	Due Date	Minimum Payment	Balance

Mrs. Bargon decided to pay $48 of the bill on September 30. After payment, her balance was __________. (Answer: $39.90)

On October 14, Mrs. Bargon received a statement with the new balance of $41.22. Her credit charge for the month was ______________. (Answer: $1.32) Mrs. Bargon thought her agreement with the bank allowed the bank to charge 1 1/2% per month on the unpaid balance. 1 1/2% of $39.90 = ______. (Answer: $.60)

Did the bank make a mistake? Read the agreement (Figure 1B) with the bank before answering. (Answer: No mistake. Interest is figured on the balance of account as of the previous billing date.) How much money did Mrs. Bargon finally save if she paid the balance of the account on October 15? (Answer: $11.87)

On the front of the envelope which contained Mrs. Bargon's statement, there was a notice to the post office which read. "Do not forward to or send out of town. Address correction requested." Why do you think the bank printed this notice on the envelope?

BORROWING MONEY

Suggested Activities and Questions:

Use your local resources (places and people) instead of textbooks and references whenever you can. Do not forget that students will need to know how to collect some of this information should they move to a new town or state.

. Where does a person borrow money?

. Why does a borrower pay back more than he receives?

. What charges are added to the face value of loans and why?

. What happens when a borrower doesn't pay back on time?

. How does a lender know whom to trust?

. Are records kept of an individual's credit rating? Where?

. Can a person lose his credit? Find out how local merchants discover the credit rating of individuals, old-timers and newcomers.

. Compare the function of a local credit bureau with that of an agency such as Dun and Bradstreet.

. What are the North Carolina regulations concerning finance companies?

. Is a reserve plan that guarantees a check a form of credit?

. What does chattel mean? What does collateral mean?

- What is a bill consolidation loan? What are its advantages and disadvantages?
- Is an endorser of a note the same as an endorser of a check?
- Collect, study and compare the costs of different credit plans available in your area.

Following discussions of these activities, the student will hopefully see the need for some mathematical ability in order to make intelligent comparisons of credit uses. Problems are suggested in textbooks and source books mentioned in the bibliography, but materials collected by the students will provide more relevant problems.

Additional Activities and Related Questions:

- Why do some businesses make no charge for charge accounts?
- Why do some merchants not engage in credit business?
- Investigate how credit is established for service accounts such as telephone, electricity, water, TV repair, doctor.
- How does someone establish credit when he moves to another town or state?
- Discuss the advantages and disadvantages of using credit cards and charge accounts.
- What goods and services may be purchased by using credit cards?
- What happens when an individual doesn't pay his charge account or credit card bill when it is due?
- What is the legal responsibility of a person who loses a credit card?
- Find out about insurance policies that cover lost credit cards.
- Have a representative from a lending agency visit the class. Questions for him to answer will emerge as the activities are used. Appoint a class secretary to record these.
- Invite an attorney to discuss legal aspects of credit and their consequences.
- Study and discuss the forms provided in Figures 1-4. Compare these with similar forms obtained locally. Figures 3 and 4 are forms which meet the requirements of the Federal Truth-In-Lending Act.

BANK CREDIT CARD APPLICATION

Last Name (Please Print) | First Name | Initial | Age

Mr.
Mrs.
Miss

Street Address | Spouse's First Name | Initial | Age

City | State | Zip Code | Tel. No. | Marital Status | Dependents | Social Sec. No.

At Present Address Years Months | Own ___ Rent ___ With Parents ___ | If at above address less than 3 years, give former home address. | Years

Presently Employed By | Years ___ Months ___ | Position | Monthly Income

Business Address: Street No. | City and State | Business Telephone

Previously Employed By | Position | Previous Business Address | Years Months

Spouse Employed By | Position | Monthly Income | Business Tel. | Years Months

Automobiles: Make | Year | Model | Financed By, & Address | Balance Due | Driver's License Number

Name of Nearest Relative NOT Living with Me | Address | City | Relationship

Credit References (Bank, Stores, Credit Unions, Finance Companies, etc.) and Complete List of ALL Debts Now Owing.
Attach Additional Sheet if Necessary

NAME	ADDRESS	ACCOUNT NO.	BALANCE DUE

Home Financed By | Estimated Value | Loan Balance | Payment

Bank With:

Checking ______________________
Bank City Acct. No.

Saving ______________________
Bank City Acct. No.

READ AGREEMENT

Figure 1A

I HAVE READ and agree to all the terms and conditions of the agreement set forth adjacent to this application wherein applicant is called holder. The above information is true and complete.

____
Applicant's Signature Date

____
Signature of other authorized card user if you wish 2 cards. Relationship

(Do Not Use This Space)
Type 1 3 5 7 2 4 6 8
C. L. 3 5 ________
Area ________
No. 1 2 3 4 ________
Approved By ________
Date ________

1 2 3 4 5 6 7 8

AGREEMENT: Use of the Bank Credit Card by, or with the consent of, the holder constitutes agreement as follows: Holder agrees (1) to assume responsibility for credit extended by the Bank on the basis of the card; (2) to pay, at such place as this Bank designates, obligations evidencing such credit, and finance charges where applicable, in accordance with billings and the current Customer Payment Schedule, including a reasonable attorney's fee in the event of suit; (3) to notify Bank promptly in writing of loss or theft of the card; (4) the card may be cancelled or modified by the Bank at any time; (5) to surrender the card upon demand; (6) to waive and release Bank from all defenses, rights and claims holder may have against any merchant or company honoring the card; (7) any claim of Bank against holder shall at Bank's option become immediately due and payable if holder fails to perform any terms hereof or make any payments as otherwise agreed.

CUSTOMER PAYMENT SCHEDULE: I understand that there will be no periodic finance charge on my Bank Credit Card account if the account is paid in full within 25 days from each billing date. If I do not pay my account in full within 25 days from each billing date, I agree to pay after each billing date a finance charge at the periodic rate of 1 1/2% per month, which is an annual percentage rate of 18%, on the balance of my account as of the previous billing date without deducting current payments and credits and without adding current charges. I also understand that there is an initial finance charge of 1 1/2% on cash advances charged to my account. There is no initial finance charge on purchases charged to my account. A delinquency charge of 5% ($.50 minimum, $5.00 maximum) is made on minimum payments which are not paid within 10 days of the date of the statement on which the past due amount first appears. If I extend payment of my account, I will make monthly payments in accordance with the following minimum payment chart:

EXTENDED PAYMENT: If your new balance is $10 to $200, your minimum payment is $10. If it is over $200, then your minimum payment is 5% of your new balance. (Balances under $10 are payable in full.)

Figure 1B

COATES AND PANTZ CLOTHIERS APPLICATION FOR CHARGE ACCOUNT

Mr. ___ First Name (Please Print) Initial Last Name
Mrs.___
Miss___

Residence: Street City State

Business Connection Position

Business Address City State

Please Give Three Stores or Personal References

Name of Bank Address or Branch
___ Regular Checking
___ Special Checking
___ Savings

Others Authorized to Purchase on Account

Please Check the Type of Charge Account Desired Signature

___REGULAR 30 DAY ACCOUNT ___ SPECIAL THREE-PAYMENT ACCOUNT

PLEASE TEAR ON PERFORATION AND ENCLOSE IN ENVELOPE

Figure 2

ANY STORE

MAIN STREET

YOUR TOWN, N.C.

(Customer's Name Here)

Amt. Paid $______

To insure proper credit return this portion with your payment.

Previous Balance	Finance Charge 50 cent Minimum	Payments	Credits	Purchases	New Bal.	Minimum Payment
	▲					

Finance charge is computed by a "PERIODIC RATE" of % per month (or a minimum charge of 50 cents for balances under $______) which is an annual percentage rate of ___% applied to the previous balance without deducting current payments and/or credits appearing on this statement.

NOTICE

Please see accompanying statement(s) for important information

▲

Payments, credits or charges, received after the date shown above the arrow, which is the closing date of this billing cycle, will appear on your next statement. To avoid additional finance charges pay the "new balance" before this date next month.

ANY STORE, MAIN STREET, YOUR TOWN, N. C.

Figure 3

Seller's Name ______________________________ Contract # ________

RETAIL INSTALLMENT CONTRACT AND SECURITY AGREEMENT

The undersigned (herein called-purchaser, whether one or more) purchases from ____________ (seller) and grants to __________ a security interest in, subject to the terms and conditions hereof, the following described property.

QUANTITY	DESCRIPTION	AMOUNT	
Description of Trade-in:			
Sales Tax			
Total			

PURCHASER'S NAME ____________________

PURCHASER'S ADDRESS ____________________

CITY__________ STATE__________ ZIP___

1. CASH PRICE $_____

2. Less: CASH DOWN PAYMENT $____

3. TRADE-IN $____

4. TOTAL DOWN PAYMENT$____ $_____

5. UNPAID BALANCE OF CASH PRICE $_____

6. OTHER CHARGES:

______________________ $_____

______________________ $_____

7. AMOUNT FINANCED $_____

8. FINANCE CHARGE $_____

9. TOTAL OF PAYMENTS $_____

10. DEFERRED PAYMENT PRICE (1+6+8) $_____

11. ANNUAL PERCENTAGE RATE _____%

INSURANCE AGREEMENT

The purchase of insurance coverage is voluntary and not required for credit. (Type of Insurance) insurance coverage is available at a cost of $____ for the term of credit.

I desire insurance coverage.

Signed________________ Date_____

I do not desire insurance coverage.

Signed________________ Date ____

Purchaser hereby agrees to pay to _______________________ at their offices shown above the "TOTAL OF PAYMENTS" shown above in ______ monthly installments of $______ (final payment to be $ ______) the first installment being payable ________ 19___, and all subsequent installments on the same day of each consecutive month until paid in full. The finance charge applies from ______(Date)________.

Signed ______________________________

Notice to Buyer: You are entitled to a copy of the contract you sign. You have the right to pay in advance the unpaid balance of this contract and obtain a partial refund of the finance charge based on the "Actuarial Method." (Any other method of computation may be so identified, for example, "Rule of 78's," "Sum of the Digits," etc.

Figure 4

Suggested Reading Assignments:

Samuelson, P.A. "Personal Debt and Interest Charges," VOGUE 151:104, March, 1968.

"Those New Rules on Interest," U. S. NEWS AND WORLD REPORT 64:857-86, February 12, 1968.

"Touting the Teenager," TIME 91:68, February 2, 1968.

"Money Grows Dearer," BUSINESS WEEK, page 38, March 23, 1968.

Feeley, M. "What's Happening to Credit Spending," AMERICAN HOME 71:44+, March, 1968.

Cook, Fred J. "When the Loan Shark Shows His Teeth," READER'S DIGEST 108:112, June, 1968.

"Truth About Credit Is Coming," CONSUMER REPORTS 33:428-431, August, 1968.

"Consumer Credit," CONSUMER REPORTS 32:396-398, December, 1967.

"What the New Truth-in-Lending Law Does for You," CHANGING TIMES 23:7-12, June, 1969.

RESOURCES

National Consumer Finance Association Educational Services Division 1000 Sixteenth Street, N.W. Washington, D.C. 20036	A One Week Teaching Unit on Consumer Finance - includes: teacher materials; teacher's manual, study guides for films, order forms for materials, catalog of additional materials, classroom materials. (free) Let's Learn About Consumer Finance A Catalog of Educational Aids for the Classroom Teacher - lists books, brochures, workbooks, study guides, units, charts and audiovisual aids that are available for classroom use at no charge. (Note: This catalog is included in the Teaching Kit.) (free)
Charlotte Observer P.O. Box 208 Charlotte, North Carolina 28201	Let The Buyer Beware - collection of news articles about deceptive practices. (free)
Federal Reserve Bank Richmond, Virginia	Consumer Installment Credit - reprinted from Federal Reserve Bulletin for June, 1968. An analysis of consumer credit for 1967. (free booklet)

Ohio State Bar Association 33 West Eleventh Avenue Columbus, Ohio 43201	Read Before You Sign When You Buy on Time (free booklets)
Committee on Public Relations Pennsylvania Bar Association 401 North Front Street Harrisburg, Pennsylvania 17101	The Serviceman and His Debts (free booklet)
Bureau of Industry Guidance Federal Trade Commission Washington, D.C. 20580	Guide Against Debt Collection Deception (free booklet)
Office of Consumer Services U.S. Department of Health, Education and Welfare Room 5167 HEW Building 330 Independence Avenue, S.W. Washington, D.C.	Consumer Newsletter - a current report of trends and news affecting the consumer. (Write to get on mailing list.)
County Home Economics Extension Agent or Home Management Department Agricultural Extension Service North Carolina State University Raleigh, North Carolina 27607	The Consumer Credit Protection Act - gives general provisions of the Truth-in-Lending Act. (free booklet)
International Consumer Credit Association 375 Jackson Avenue St. Louis, Missouri 63130	How to Use Consumer Credit Wisely (free booklet)
President's Committee on Consumer Interests Executive Office Building Washington, D.C. 20506	Guide to Federal Consumer Services - directory which deals with 39 governmental agencies providing the following for each unit: (a) origin, (b) main purpose, (c) principal laws administered, (d) major consumer functions, (e) how the functions are performed and/or enforced, (f) how to obtain the unit's services and (g) publications issued by the unit. (free booklet)

FILMS:

Association Films, Inc. 2277 Faulkner Road, N.E. Atlanta, Georgia 30324	The Wise Use of Credit #S-424 (11 min., color) Provides a basic understanding of consumer credit, economic terms, types of credit, cost factors, and guidelines for use of credit.

	The Littlest Giant #S-416 (14 min., color) Describes the history of consumer credit, factors that determine the rates charged to the borrower, and the importance of consumer credit to the economy.
Modern Talking Pictures Services, Inc. 503 North College Street Charlotte, North Carolina 28202	Credit #2930 (14 min., color) Shows how the credit rating for a business is determined by a rating firm.

BANKS AND THEIR SERVICES

The fact that ninety percent of all payments made in the United States are in the form of checks is indicative of the major role played by commercial banks in the economy of the country. Since banks exist to receive deposits and to lend money, few consumers remain untouched by banking. Your students who are not already using the services of commercial banks in all likelihood soon will be. As they go about the business of making a living and fulfilling their roles as consumers, it is desirable that they be familiar with the services and functions of banks and that they develop the mathematical skills essential to using the banks intelligently.

While many of your students may have some notion about banks and their services, it is quite probable that none of them are familiar with all the functions associated with banks. The check function is perhaps the most widely understood of all; however, it is important that your students understand the others. Other services of the commercial bank worthy of attention are time deposits, drafts, safety deposit facilities, traveler's checks, money orders, and selling and redeeming United States Savings Bonds.

A. Objectives

1. The student lists the functions of a commercial bank.
    a. The student identifies a bank as a safeguard of deposits.
    b. The student identifies the lending function as the principal source of profit to a commercial bank.
    c. The student describes how a bank is able to lend its depositors money.
    d. The student identifies protection given to depositors.
2. The student distinguishes between demand and time deposits.
3. The student defines the trust functions of a bank.
4. The student describes how checks are cleared.
5. The student describes the role of the Federal Reserve Bank in transfer of deposits.
6. The student enumerates banks' services to consumers.
    a. The student describes a consumer checking account and its operation.
        1) The student describes the process of opening an account.
        2) The student writes a check.

        - 3) The student accurately determines balances.
        - 4) The student makes out a deposit ticket.
        - 5) The student determines whether or not he is to pay a service charge.
        - 6) The student reads and reconciles a bank statement.
        - 7) The student explains why checks may be returned.
        - 8) The student makes and distinguishes between restricted, full, qualified and blank endorsements.
    - b. The student describes a time account and computes simple interest.
    - c. The student describes the use of bank drafts.
    - d. The student describes the various types of loans made by banks and computes interest on each type.
    - e. The student describes the function of bank credit card plans.
- 7. The student describes specialized financial institutions which may be called banks, but which do not perform the services of an ordinary commercial bank.
- 8. The student identifies the distinguishing characteristics of State and National banks.

B. Suggested Topics for Study

- 1. Types of banks
    - a. Commercial
    - b. Savings
    - c. State
    - d. National
    - e. Specialized financial institutions
        - 1) Investment banks
        - 2) Savings and loan associations
        - 3) Credit unions
        - 4) Industrial banks
- 2. Bank services
    - a. Checking accounts

        1) Opening an account
        2) Making a deposit
        3) Writing checks; stopping payment
        4) Balancing statements
        5) Endorsement
        6) Cost
        7) Advantages
        8) Disadvantages
        9) Legal responsibilities
        10) Clearing house
    b. Bank drafts and checks
        1) Drafts
        2) Certified checks
        3) Cashier's checks
        4) Traveler's checks
    c. Savings accounts
    d. Loans
    e. Credit cards
    f. Mortgages
    g. Trust facilities
    h. Sale and redemption of government bonds
    i. Investment
    j. Safe-deposit
    k. Bank life insurance
3. Related topics
    a. American Bankers Association
    b. Federal Reserve System
    c. Federal Deposit Insurance Corporation
    d. State Banking Commission

C. Mathematical Concepts

1. Computing simple and compound interest

2. Interpreting graphs and charts

3. Fundamental operations involving rational numbers

4. Converting rational numbers from decimal notation to fractional notation

5. Interpreting and working with formulas

6. Statistics

INTRODUCING THE UNIT

Since high school graduates earn an average of $258,000 in a lifetime, your students need to know how to protect their income and how to put it to work for them. A college graduate may earn an additional $177,000. This unit is designed to help the student learn how to use banking services to protect his earnings.

A discussion of banking may develop as an outgrowth of what the students know. Here are some questions that you might wish to use to get the discussion started.

What is a check? How does it "work"?

How do banks make a profit?

What kinds of banks are in our community?

What purposes do banks serve?

How did banks originate?

TYPES OF BANKS

Banks that are authorized under Federal law are NATIONAL banks, and those authorized by State laws are STATE banks. Commercial, savings, and trust are the three distinct types of banks and are generally recognized by both State and Federal laws. Most likely your students will be familiar with the commercial banks, but will not know as much about savings banks and trust companies. The following questions are designed to acquaint the student with the different types of banks.

. What are the differences between commercial and savings banks?

. What are the functions of a trust company? a commercial bank? a savings bank? A visit by the class to each of these banks would help the students see these banks in action.

- How does a State bank differ from a National bank?
- Is a savings and loan association really a bank? Is a credit union a bank?
- Is a small bank a thing of the past?
- For what purposes and in what ways do banks use computers?

BANK SERVICES

- List some places used by people to safeguard their money.
- What procedure is followed in opening a savings account?
- How do you withdraw money from a savings account?
- What is the American Bankers Association? What are some of its functions?
- What are A.B.A. numbers? Secure checks from different banks and discuss these numbers.
- What are the advantages of having a checking account?
- What procedure is followed in opening a checking account?
- How do you make a deposit? Secure some deposit slips from your bank and have each student fill out the slip using sample data.
- Should you ever stop payment on a check? When? How?
- Do you know the proper ways of endorsing a check? A good bulletin board display could be developed from these proper ways.
- What is the cost of a checking account? Investigate how your bank determines checking account service charges.
- What does the phrase "reconcile a bank statement" mean?
- What is a safe-deposit box? Appoint a student committee to interview someone who rents a safe-deposit box and ask him what kinds of items he keeps in it.
- Why do some banks give free checking service to those depositors who maintain a minimum balance of $100?
- What is a bank loan? Have someone investigate different kinds of loans that are available and prepare a chart or a bulletin board display illustrating this information.
- Distinguish between add-on and discount interest for bank loans.
- What is the FDIC? Why is there a need for such an organization?
- What services are offered by a full service bank?

- How does a certified check differ from a cashier's check?
- What is a bank draft?
- Discuss the advantages and disadvantages of bank credit cards.
- What is the Federal Reserve System and what are some of its functions?
- What is a clearing house?

ADDITIONAL ACTIVITIES

- Find out how to send money to a foreign country.
- Design a bulletin board or display comparing materials obtained from local banks.
- Financial statements of local banks are published periodically in newspapers. Obtain these statements and discuss the different kinds of assets, liabilities and the amount of cash a bank has on hand or on deposit with the Federal Reserve Bank.
- Ask the local bank to send a representative to speak to the class.
- Contact local banks about the possibility of arranging a banking seminar for students in the area. You may be able to interest other civic groups in helping sponsor this.
- Have the class arrange a mock loan with a bank.
- Some of the students may have checking accounts. Perhaps they would be willing to let the class reconcile their bank statements.
- Investigate the functions of the State Banking Commission.
- Collect data about recent bank robberies in North Carolina. Has the advent of branch banks encouraged bank robberies?
- Use the statement (Figure I), blank checks and deposit slips obtained from a bank in your area for class activities.

RELATED PROBLEMS

Vera Stout estimates that she spends $5.65 each week for between-meal-snacks. She decides to reduce this amount to $2.00 a week and save the difference. How much will she save in a year? (Answer: $189.80)

Assume that you had a balance of $550.58 at the end of January, that you deposited $88.42 and $141.49 during February, and that you wrote checks for $10.62, $14.83, $27.70 and $55.80 during February. What should your balance be at the end of February? (Answer: $671.54)

On June 30, Hale N. Hearty had a bank balance of $249.22. On several subsequent visits to the bank he made the following transactions:

Visit	Transaction
No. 1	Deposit $60; withdrawal $42.70
No. 2	Withdrawal $10.89
No. 3	Withdrawal $25.35
No. 4	Deposit $225; withdrawal $9.90
No. 5	Deposit $25.25; withdrawal $7.94

What is his balance? (Answer: $462.69)

Find the simple interest on $3500 at 4 1/2 percent for three years. (Answer: $472.50)

Use Table I to determine how much interest $600 will earn in two years if the interest rate is 5 percent compounded semi-annually. (Answer: $62.29)

Abie Lenda deposits $200 in the CREEK BANK at 4% interest compounded quarterly. Use Table I to find how much he has at the end of two years. (Answer: $216.57)

Hy R. Lowe borrowed $1600 from the Last National Bank. Last National's loan rate is 7 1/2% per annum. If Hy borrowed the money for two years, how much interest will he have to pay? (Answer: $240)

Willie needed $3,000 for 45 days. He could either borrow this money from his brother-in-law at an 8% interest rate or from the bank at a discount rate of 8%.

(a) If he borrowed this money from the bank, what would the charge be? (Answer: $30)

(b) If he borrowed this money from his brother-in-law, what would the charge be? (Answer: $30)

(c) How much actual cash would he receive from the bank? from his brother-in-law? (Answers: $2,970; $3,000)

Find the correct checkbook balance in each of the following:

	Checkbook Balance	Omitted on Check-stub Record			Other Adjustments	
		Service Charge	Check for	Deposit of		
1.	$456.28	$2.10	$25.00	None	Check #86 for $9.40 entered on stub as $4.90	(Answer: $424.68)
2.	$728.55	None	$12.00	$20.00	Check #38 for $27.50 entered as $25.50	(Answer: $734.55)
3.	$634.64	$1.15	None	$27.75	Check #55 for $15.00 entered as $51.00	(Answer: $697.24)

Prepare a reconciliation statement for each of the following:

	Bank Statement Balance	Checkbook Balance	Service Charge	Outstanding Checks	Other Adjustments	
1.	$145.56	$198.27	$1.08	Check #20 for $ 15.00 Check #31 for $ 8.00	Had paid a check for $10.87 that had not been recorded. A check for $161.20 has been recorded and deducted on check stub as $116.20. A deposit of $18.76 has been entered twice.	(Ans: $122.56)
2.	$847.81	$772.77	$1.56	Check #3 for $ 14.65 Check #7 for $ 8.55 Check #11 for $ 38.40	A deposit of $15.00 not recorded on check stub.	(Ans: $786.21)
3.	$737.35	$576.65	None	Check #81 for $ 40.18 Check #83 for $ 23.10 Check #117 for $137.42	$40.00 deposit not shown on bank statement.	(Ans: $576.65)

STATEMENT OF ACCOUNT WITH
CREEK
Bank and Trust Company

Period Ending
3-28-69

Account Number
12-34-567

Linda Penny
Anytown,
North Carolina

May we help you today?

Checks-Listed in Order of Payment-Read Across		Deposits	Date	Balance
				248 46
		85.00	3 1	333 46
13.12			3 1	320 34
10.24			3 4	310 10
4.64			3 6	305 46
8.25			3 9	297 21
12.00			3 10	285 21
2.75			3 12	282 46
5.98			3 14	276 48
		70.00	3 15	346 48
1.05 S			3 15	345 43
14.60			3 16	330 83
9.82			3 18	321 01
17.65			3 19	303 36
3.00			3 21	300 36
7.22	5.00		3 26	288 14
10.00			3 28	278 14

Please Advise Us of
Any Change in Address

EXPLANATION OF SYMBOLS

R	Reversing Entry
M	Miscellaneous Entry
S	Service Charge
O.D.	Overdraft
L	Listed Checks

PLEASE EXAMINE AT ONCE. Report any alterations, forgeries, or other irregularities directly to the customer auditor. If nothing is reported within thirty (30) days, this statement will be considered correct.

Figure I

A COMPOUND INTEREST TABLE
TOTAL AMOUNT OF $1 INVESTED AT SPECIFIED RATE FOR SPECIFIED NUMBER OF PERIODS

Periods	1%	1 1/2%	2%	2 1/2%	3%	3 1/2%	4%	4 1/2%	5%	5 1/2%	6%
1	1.010000	1.015000	1.020000	1.025000	1.030000	1.035000	1.040000	1.045000	1.050000	1.055000	1.060000
2	1.020100	1.030225	1.040400	1.050625	1.060900	1.071225	1.081600	1.092025	1.102500	1.113025	1.123600
3	1.030301	1.045678	1.061208	1.076891	1.092727	1.108718	1.124864	1.141166	1.157625	1.174241	1.191016
4	1.040604	1.061364	1.082432	1.103813	1.125509	1.147523	1.169859	1.192519	1.215506	1.238825	1.262477
5	1.051010	1.077284	1.104081	1.131408	1.159274	1.187686	1.216653	1.246182	1.276282	1.306960	1.338226
6	1.061520	1.093443	1.126162	1.159693	1.194052	1.229255	1.265319	1.302260	1.340096	1.378843	1.418519
7	1.072135	1.109845	1.148686	1.188686	1.229874	1.272279	1.315932	1.360862	1.407100	1.454679	1.503630
8	1.082857	1.126493	1.171659	1.218403	1.266770	1.316809	1.368569	1.422101	1.477455	1.534687	1.593848
9	1.093685	1.143390	1.195093	1.248863	1.304773	1.362897	1.423312	1.486095	1.551328	1.619094	1.689479
10	1.104622	1.160541	1.218994	1.280085	1.343916	1.410599	1.480244	1.552969	1.628895	1.708144	1.790848
11	1.115668	1.177949	1.243374	1.312087	1.384234	1.459970	1.539454	1.622853	1.710339	1.802092	1.898299
12	1.126825	1.195618	1.268242	1.344889	1.425761	1.511069	1.601032	1.695881	1.795856	1.901207	2.012196
13	1.138093	1.213552	1.293607	1.378511	1.468534	1.563956	1.665074	1.772196	1.885649	2.005774	2.132928
14	1.149474	1.231756	1.319479	1.412974	1.512590	1.618695	1.731676	1.851945	1.979932	2.116091	2.260904
15	1.160969	1.250232	1.345868	1.448298	1.557967	1.675349	1.800944	1.935282	2.078928	2.232476	2.396558
16	1.172579	1.268986	1.372786	1.484506	1.604706	1.733986	1.872981	2.022370	2.182875	2.355263	2.540352
17	1.184304	1.288020	1.400241	1.521618	1.652848	1.794676	1.947901	2.113377	2.292018	2.484802	2.692773
18	1.196147	1.307341	1.428246	1.559659	1.702433	1.857489	2.025817	2.208479	2.406619	2.621466	2.854339
19	1.208109	1.326951	1.456811	1.598650	1.753506	1.922501	2.106849	2.307860	2.526950	2.765647	3.025600
20	1.220190	1.346855	1.485947	1.638616	1.806111	1.989789	2.191123	2.411714	2.653298	2.917757	3.207135
21	1.232392	1.367058	1.515666	1.679582	1.860295	2.059431	2.278768	2.520241	2.785963	3.078234	3.399564
22	1.244716	1.387564	1.545980	1.721571	1.916103	2.131512	2.369919	2.633652	2.925261	3.247537	3.603537
23	1.257163	1.408377	1.576899	1.764611	1.973587	2.206114	2.464716	2.752166	3.071524	3.426152	3.819750
24	1.269735	1.429503	1.608437	1.808726	2.032794	2.283328	2.563304	2.876014	3.225100	3.614590	4.048935
25	1.282432	1.450945	1.640606	1.853944	2.093778	2.363245	2.665836	3.005434	3.386355	3.813392	4.291871

Table I

Suggested Reading Assignments:

Williamson, D. "They've Got Your Number and Theirs, Too," SATURDAY REVIEW 51: 2+, April 13, 1968.

Lindberg, P. "Joint or Separate Checking Accounts?", BETTER HOMES AND GARDENS 46:10, March, 1968.

"At Fever Levels," TIME 91:93-4, April 5, 1968.

"Bond Rates Take A Breather," BUSINESS WEEK, Page 93, April 6, 1968.

Cook, F. J. "Just Call The Doctor for A Loan," NEW YORK TIMES MAGAZINE, Page 19+, January 28, 1968. Discussion, Page 12, February 18, 1968.

"Bankers Hold The Door Open; Corporate Borrowing," BUSINESS WEEK, Page 99+, January 20, 1968.

"Bank Checking Services," BETTER HOMES AND GARDENS 45:105, December, 1967.

"Easier Borrowing Ahead? One Straw in The Wind," U. S. NEWS AND WORLD REPORT 65: 103, October 7, 1968.

Feeley, M. "Are You Using Your Checking Account to Its Fullest?", AMERICAN HOME 71:30, June, 1968.

"Flood of Bank Credit Cards," U. S. NEWS AND WORLD REPORT 63:101, December 4, 1967.

"Interest Rates Up and Up, What The Effects Will Be," U. S. NEWS AND WORLD REPORT 64:86-87, April 29, 1968.

"Do You Really Benefit from Bank Credit Card Plans?", BETTER HOMES AND GARDENS 45: 6, December, 1967.

"New Squeeze on Borrowers: What It Means to You," U. S. NEWS AND WORLD REPORT 64: 83-84, May, 1968.

"Official Word on Bank Credit Cards," U. S. NEWS AND WORLD REPORT 65:81, August 12, 1968.

"Personal Business - Hard Cash Can Hurt The Traveler," BUSINESS WEEK, Pages 107-108, July 20, 1968.

RESOURCES

Federal Reserve Bank of Richmond Richmond, Virginia 23213	Free booklet
Banking Education Committee The American Bankers Association 90 Park Avenue New York, New York 10016	List of Materials on Money and Banking (free booklet)

Library Research Department Federal Reserve Bank of St. Louis P.O. Box 442 St. Louis, Missouri 63166	Your Money Supply - describes the function, creation and expansion of money in the United States' economy. (booklet, free in classroom quantities)
United States Secret Service Treasury Department Washington, D.C. 20220	Counterfeiting - Know Your Money (leaflet, free in classroom quantities)
Federal Deposit Insurance Corporation 550 Seventeenth Street, NW Washington, D.C. 20429	Federal Deposit Insurance Corporation - briefly describes the nature and condition of bank deposit insurance. (leaflet, free in classroom quantities)
Small Business Administration Charlotte, North Carolina	Outwitting Bad-Check Passers (free leaflet)
Bank Marketing Association P. O. Box 2985 Richmond, Virginia 23235	How To Do Your Banking - describes the major services of banking. (booklet, free in classroom quantities)

FILMS:

Federal Reserve Bank of Richmond Bank and Public Relations Department Richmond, Virginia 23213	You and Your Money (12 1/2 min., color) Describes the flow of money in the economy; causes of inflation; the role of the Federal Reserve System as a regulator of money flow. Good introductory film.
	Money and Banking (28 min., color) Shows types of services offered by banks; has good explanation of charges for loans; explains the role of the Federal Reserve System in regulating the flow of money in the nation's economy.
	Banking in Action (20 min., color) Relates history of banking in America; describes services offered by banks.
	Paying by Check (14 1/2 min., color) Gives history of checking accounts; tells how to write a check; traces the route of a check through the banking system.
	Money on the Move (27 min., color) Shows how cash comes into circulation and is withdrawn; how personal checks are processed each day.

SAVINGS AND INVESTMENTS

The idea of "saving" money, in the sense of obtaining a bargain, is generally acceptable. It is a rare individual, indeed, who does not pride himself on striking a good bargain. However, the idea of saving money, in the sense of laying aside resources for future use, is neither so well received nor so universally practiced. A rainy day approach to the topic lacks interest and motivational appeal for students living in an era of high living standards and easily obtained credit. Replacing the negative connotation of miserly frugality with a more positive concept may project an exciting image of the idea.

The topic Savings and Investments traditionally has been slanted toward dollars and cents. Although such a focusing of attention quite properly has a place in the unit, it should be recognized that consumers save and make investments involving media other than money. For example, the consumer's income generally derives from an investment of time. The richer, fuller life accrues to him who invests the totality of his assets in such a way as to produce satisfying returns.

The investment-return principle permeates nearly all aspects of life, particularly in an economy based on free enterprise. Risk is ever present in investments and is usually proportional to the anticipated return. So simple a transaction as the purchase of an ice cream cone is an investment. The purchaser invests his money, his return is satisfaction, and the risk includes quality and quantity.

For the unit to have appeal and for the ideas that it contains to have meaning, Savings and Investments should be approached flexibly, presenting the notion of savings as surplus income, and investments as something more than stocks and bonds.

A. Objectives

1. The student can give examples of non-money savings and investments.
2. The student describes savings in terms of surplus income.
3. The student interprets investment in terms of risk and return.
4. The student distinguishes between transfer and new investment.
5. The student can cite the risks and returns related to securities.
6. The student can explain savings as a function of money management.
7. The student recalls rate formulas.

    a. He computes simple interest.
    b. He computes compound interest.
    c. He computes commissions.
8. The student can compute anticipated return.

B. Suggested Topics:

1. Savings
    - a. Surplus income
    - b. Safe-keeping
        - 1) Hoarding
        - 2) Using a checking account
        - 3) Using a savings account
        - 4) Buying savings and loan certificates
        - 5) Joining a credit union
    - c. Use
        - 1) Purchase of durable goods
        - 2) Education
        - 3) Unforeseen emergencies
        - 4) Investments
2. Investments
    - a. Capital
    - b. Risks
    - c. Anticipated returns
    - d. Securities
        - 1) Stocks
            - a) Common
            - b) Preferred

        2) Bonds
            a) Corporate
            b) Governmental
        3) Investment companies
            a) Trust
            b) Mutual fund
    e. Real estate
    f. Business
    g. Commodities

C. Mathematical Concepts
  1. Operations involving rational numbers
  2. Percentage
  3. Estimation
  4. Graphs
  5. Statistics

INTRODUCING THE UNIT

There are probably some in your class to whom the idea of having a surplus of money is totally unrealistic owing to individual economic environments. To involve all students, to stimulate their interests and to present the concepts of the unit in a generalized frame of reference, it is suggested that in opening the unit discussion be directed toward non-money savings and investments.

The students may not spontaneously come forth with non-money savings and investments. In such instances a directed question or so may be helpful. For example:

> Energy can be saved. Suppose the halfback is ahead of the field. He is ten yards from the goal line, and an opponent is two yards behind. Is this an advantageous time to save energy?
>
> Which of the following would be interested in conserving time?
>
> A worker paid on the basis of piece work?
> A worker paid on an hourly basis?
> A worker contracting a particular job?
> A person at the beach?
>
> Is the generalization, "As the time for a task to be done is diminished, the energy required increases," true?

What does "save" mean? Which of the dictionary meanings are applicable to consumer mathematics? Give examples.

What does "invest" mean? Which meanings are applicable to consumer mathematics? Give examples.

Have you made an investment recently? Describe.

Isolate the investment, the risk, and the anticipated return for the following:

Accepting a job
Planting a garden
Studying for a test
Undertaking a do-it-yourself job
Preparing a meal
Attending high school
Attending technical school

In what instances is time-saving an asset?

In what instances is time-saving a liability?

In what instances is energy-saving an asset?

In what instances is energy-saving a liability?

How have time-saving machines influenced our lives?

SAVING MONEY

Perhaps an approach to savings based on familiar ideas will encourage students to deepen their appreciation of the practicality of the topic. Most students have some concept of profit in terms of selling price and costs. Savings can be analogously presented in terms of income and expenditures.

Profit is the excess of income over costs. When the consumer has an excess of income over expenses he has a saving. In business when expense exceeds income, the result is called a loss; however, businesses usually have a source of funds called capital to cushion loss. On the other hand, when the consumer's expenses exceed his income the difference is called trouble, and it may be necessary for him to liquidate some of his capital assets in order to pay his bills.

Obviously there are three factors in the savings formula: savings equals income minus expenditures. Of these three, only two are ordinarily variables. In the instance of a salaried person, income is fairly constant. Such a consumer, if he desires to save, must keep expenses less than income. Savings for him is a function of money management. For a wage-earner in seasonal or unsteady work, income becomes a variable. Again, saving is a result of money management.

Saving is easiest when there is a definite purpose. If the desire to reach a goal is strong enough, the consumer may be able to make adjustments in his expenses. There may be instances in which consumer needs are so rigidly established that if desire for a goal overrides them, suffering may result.

Students should be given the opportunity to discover that savings, income and management are inseparable.

. Is it easy to save money? What factors influence saving?

. Why do some people use "forced" savings?

. In what respects do time-payment loans enforce saving?

. Why would anyone want to save?

. What would you do with your savings?

. Would you agree that saving is a function of budgeting?

. What are some expense items that might be adjusted to increase savings?

. What are some events that could result in increased savings without adjusting expenses?

. How is saving similar to profit?

PROTECTING THE NEST EGG

There are people who make savings and then store them in some unusual places - the cookie jar, the mattress, the walls, the back yard, ad infinitum. Finding a place for savings is no problem to those who have none; however, it is a problem for the others and the problem increases with the amount of savings. As suggested above, one possibility is to hoard the money. Another is to have a checking account. Still another is to have a savings account. The consumer may elect to invest his savings. It may be sufficient for one individual merely to have a place for his resources; another may use his money to make money.

Regardless of the mode of storage selected, for any advantage there corresponds a disadvantage. For example, the advantage of immediate availability of hoarded money carries the risk of loss by fire, theft, or misplacement. The same convenience makes a person more vulnerable to impulsive spending. The security and convenience of a checking account is bought at the expense of the interest that could be earned on savings accounts. At the same time, the savings account costs inconvenience in time requirements in making withdrawals. Investment in securities involves risk and at times inconvenience in liquidation.

. What are some advantages of hoarding money?

. What effect does hoarding savings have on the economy?

. Can burned money be redeemed?

. Can stolen money be recovered?

. In what ways are checking accounts secure?

. What is a savings bank?

. What is a savings and loan association?

. What is a credit union?

. How can inconvenience in converting savings to cash help preserve the savings?

SAVINGS ACCOUNTS

Savings accounts are available in several forms. Although savings accounts earn interest, they are generally used more for security than for return.

Commercial bank savings accounts pay interest on deposits subject to specified requirements. Such savings accounts are called time deposits, and funds on deposit are not subject to the depositor's demand as are checking account deposits. Much of the money loaned by such banks derives from time account deposits.

Savings and loan associations are mutual organizations dealing primarily in real estate loans. Persons who save buy certificates of membership. Bylaws of such associations specify the requirements for redeeming the certificates.

Credit unions are mutual associations whose memberships are limited to persons of certain common interests. This cooperative savings institution makes loans to members and pays dividends.

Each of these three types of savings institutions has certain similarities and differences. Among the similarities is that the money loaned by each of them is usually spent within the community in which it is located thus keeping money in the local economy.

. Why do some savings plans pay more interest than others?

. Is interest computed on the entire balance?

. Is there a minimum balance required to earn interest?

. How are savings converted to cash?

. What are some local savings institutions?

. How can your savings help the community?

. Is money in a savings account idle money?

. Investigate the role of savings and loan associations during recovery from the depression.

. Find out how a local credit union operates.

. Survey advertisements of savings institutions to determine whether the consumer is being encouraged to save or to borrow.

INVESTMENTS

As suggested in an opening question, many meanings are associated with the word investment. It is important that the student understand the relationships between investment, return and risk.

Investment in corporations may be one of two general types: as a creditor or as an owner. A bondholder is a creditor of the corporation and his investment is in the form of a loan. A stockholder is a part-owner; and while he shares in the profits, he is also responsible for its losses.

United States bonds are purchased by many people. While somewhat like a savings account deposit, such bonds may be considered as loans to the federal government. State and municipal bonds are also for sale. Investments may be in goods, such as an automobile or a freezer in which the return is satisfaction. Real estate is often purchased as a revenue producing investment.

. Can an individual invest in a business of his own?

. How could a sole-proprietorship or partnership be funded?

. How is a risk related to return?

. What are securities?

. How does exchange of stock influence true (technical) investment?

. Which security is better in inflationary times?

. What does "speculation" mean?

. In what ways are all investments speculative?

. How does time in preparing to be a wise consumer serve as an investment? What are the returns expected? What are the risks?

. Is education as an investment like a bond with a single pay-off, or like a common stock yielding continual dividends?

. What is the difference between preferred and common stock?

. What is a bear market? a bull market?

. Have students make reports on the crash of 1929.

. Have students play the roles of investors in various securities. Assign them a fixed amount of capital to invest and have them follow their investments in a newspaper for a two-week period. (Did the investment bring the anticipated return?)

. Investigate the influence of a high priced stock on the expansion of the company.

- Investigate some local bond issue that may be planned for your community.

- What are some risks in real estate investment?

ADDITIONAL ACTIVITIES

- Plan a field trip to a brokerage office. If your locality is within reach of a broker's office (stock exchange member) equipped with quotation boards and ticker, your class will benefit from observing the activities there. If this cannot be arranged, the film The Lady and the Stock Exchange could be used to show these activities.

- Prepare a bulletin board showing the money flow in various types of investments.

- Prepare a report or poster in which the participation of wage earners in American business ownership is described.

- Prepare a brief questionnaire and conduct a survey within the school to discover what people know about stock exchanges.

- Prepare a bulletin board display for the school on the theme "time spent in school is an investment."

- Have your class form an imaginary corporation and "buy" stock in it. This will give the students the opportunity to investigate charters, certificates of incorporation, stock certificates, boards of directors, management, etc.

- Select students to produce skits showing how families might use their savings.

- Discuss ways a student might invest in himself.

RELATED PROBLEMS

Last year Paddy O'Furniture had a total take-home pay of $5955; his total expenditures amounted to $5350. How much did he save? (Answer: $605)

N. Vester paid $15,000 for an old house. He spent $3,000 for repairs. After living there for two years, he sold the house for $24,000.

a. What amount did he have invested? (Answer: $18,000)
b. What return did he realize on this investment? (Answer: $6,000)
c. What was the percent of gain? (Answer: 33 1/3%)
d. What was the yearly rate of gain? (Answer: 16 2/3%)

Sonny Day deposited $3,000 in a savings institution which paid interest at the rate of 5% annually, compounded semi-annually. How much was his account balance three years later? Assume he made no withdrawals or deposits. Interest is paid only on whole dollars. (Answer: $3479.04) Suppose the interest had been paid on the entire amount. How much interest would he have? (Hint - use a compound interest table) (Answer: $479.10)

In order to save for the down payment on a new house, Knott Rielly and his wife wanted to save $1000 per year. Their present income is $8500 and their expenditures have been averaging $7600 per year. Approximately what percent of the expenditures must be reduced to reach this goal? (Answer: approximately 1 1/3%)

The Fake Stock Exchange Market Report had the following listings:

	Sales (hds)	High	Low	Close	Net Chg.
Contrax	350	93	89 3/8	89 7/8	-2 1/4
ConU & ICont	86	36 3/8	34 1/8	34 3/8	-1 1/2
ConVix	4	43 3/8	43 1/4	43 3/8	+1/8

a. How many shares of Contrax were sold this day? (Answer: 35,000)
b. What was the highest bid for ConVix? (Answer: $43.375)
c. At what price did ConU and ICont close? (Answer: $34.375)
d. What was the closing price for Contrax the day before? (Answer: $92.125)
e. Which was the most active stock? (Answer: Contrax)

Dewey Orr Donte had saved $2500. He decided to invest some money in a used car. The car that he bought cost him $995; he spent another $400 on parts and paint to get the car in good shape. He sold the car for $1400. Approximately what percent gain did this investment return? (Answer: approximately .35%)

In North Carolina there is a maximum fine of $50 for littering the highway. Guy Smart did not throw trash on the highway, thereby saving $50. By how much was his savings account increased as a result of this act? (Answer: 0)

If you begin a savings plan calling for you to save a penny on the first day, two on the second day, four on the third day, eight on the fourth day, etc., how many years will it take you to save at least $10,000? (Use 1 year = 360 days) (Answer: 1/18 year)

Suggested Reading Assignments:

"Boom in Investment Clubs; Do It Yourself Stockholders," U. S. NEWS AND WORLD REPORT 65:79, July 29, 1968.

"Bonds Vs. Stock - Growing Dilemma," U. S. NEWS AND WORLD REPORT 63:87-89+, December 18, 1967.

"Bonus Interest on Your Savings: Savings Certificates," CHANGING TIMES 22:37-38, February, 1968.

Bush, G. "Ten Most Misunderstood Facts about Mutual Funds," BETTER HOMES AND GARDENS 46:47-48, May, 1968.

"Buying and Selling Stocks; What New Ground Rules Will Mean," U. S. NEWS AND WORLD REPORT 65:77-78, August 26, 1968.

"Consumer's Pinchpenny Mood," NEWSWEEK 71:69+, February 26, 1968.

"Credit Unions Pool Resources; New Investment Policy," AMERICA 119:174, September 14, 1968.

Feeley, M. "ABC's of Investing," AMERICAN HOME 70:44-45, October, 1967.

"Florida's Land Boom Gets Down to Earth; Fly By Night Operators Replaced By Big Corporations," BUSINESS WEEK 136:138+, April 13, 1968.

"How Gold Hit Investors Worldwide," BUSINESS WEEK, Pages 124-215, March 23, 1968.

Lindberg, P. "Build a Financial Legacy for Your Child," BETTER HOMES AND GARDENS 45:6+, December, 1967.

"10 Most Misunderstood Points About Borrowing Money," BETTER HOMES AND GARDENS 47: 7+, August, 1969.

"New Look at the Stock Market: What Experts Say," U. S. NEWS AND WORLD REPORT 64: 39-41, February 12, 1968.

Smith, A. "Money Games - Excerpts," LADIES HOME JOURNAL 85:78+, October, 1968.

"What Compounding Adds to Your Savings," CHANGING TIMES 21:29, October, 1967.

"What Some High-Yield Stocks are Paying Now," U. S. NEWS AND WORLD REPORT 64: 92-93, March 18, 1968.

"Why People Save So Much: What Bankers Say," U. S. NEWS AND WORLD REPORT 64: 56-58, February 5, 1968.

RESOURCES

Francis I. Dupont and Company One Wall Street New York, New York 10005	10 Common Mistakes in Investing, 10 Common Sense Rules for Successful Living (free booklet)
Manager School and College Relations New York Stock Exchange 11 Wall Street New York, New York 10005	Portfolio of Teaching Aids - to accompany "You and the Investment World." (free kit) You and the Investment World - describes how stocks and bonds are bought and sold. (booklet, free in classroom quantity; use school stationery to order) The World of Investing - designed to test student's knowledge of investing. Answer key is included in quantity orders. May use in conjunction with You and the Investment World. (test, free in classroom quantities)

Merrill, Lynch, Pierce, Fenner & Smith, Inc. (contact nearest office) Charlotte Raleigh Wilson Greensboro Asheville Winston-Salem	Questions and Answers About the Stock Market (booklet, free in classroom quantities) What Everyone Ought to Know About the Stock and Bond Business (booklet, free in classroom quantities) Investment Facts - Discusses common stocks, gives list of some that have paid cash dividends over long period of time. (booklet, free in classroom quantities)
Savings and Loan Association (contact local office)	An assortment of free pamphlets available.

FILMS:

Modern Talking Picture Service, Inc. 501 North College Street Charlotte, North Carolina 28202	The Lady and the Stock Exchange #2095 (27 min., color) Shows how a couple invested an inheritance. Working Dollars #644 (13 min., color) An animated cartoon which shows the adventures of an average investor with savings to invest. What Makes Us Tick #183 (12 min., color) An animated cartoon explaining the operations of the stock market, how corporations become listed on the Exchange, and the role of the nation's millions of investors. Your Share in Tomorrow #1051 (27 min., color) Explains stock transactions, the function of brokers and how everyone can share in America's future.